THE INFLUENCE OF KNOWLEDGE SHARING ON MOTIVATION TO TRANSFER TRAINING: A MALAYSIAN PUBLIC SECTOR CONTEXT

A thesis submitted in fulfilment
of the requirement for the degree of
DOCTOR OF PHILOSOPHY

by

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ABSTRACT

Organisations wishing to enhance their return on investment from training must understand the variables associated with transfer of training so that they can promote those which enable transfer and intervene to limit those which inhibit transfer. In the international literature on training transfer, researchers and practitioners have acknowledged that transfer of training will occur only when trainees have the desire or motivation to transfer training to the job.

In Malaysia, despite increasing investment in public sector training, there has been very little research on transfer of training. This thesis contributes to a greater understanding of transfer of training variables and how they affect trainees' motivation to transfer their training. Further, as the role of training has progressively changed from a focus on programs to a broader focus on learning, creating and sharing knowledge, this thesis tests the hypothesis that knowledge sharing behaviour influences a trainee's motivation to transfer their training.

Using a research framework constructed from an adaptation of two key Human Resource Development models (Holton 1996; Holton et al. 2000) and the theory of planned behaviour (Ajzen 1991), this thesis explores the contention that trainees' motivation to transfer training is influenced by a number of secondary influence variables, expected utility variables, transfer climate variables, enabling variables and ability variables as well as the variables associated with sharing behaviour.

Through a questionnaire administered to 437 government employees attending training programs in the National Institute of Public Administration, a central training organisation for government employees in Malaysia, the thesis created an empirical database from which to study the phenomenon of transfer of training. This work culminated in the development of a structural model for motivation to transfer training which incorporates knowledge sharing behaviour and extends our understanding of the operation of the precursors to motivation to transfer.

The findings of this thesis impact on HRD functions in the Malaysian public sector at two broad levels: pre training and post training. The thesis makes a contribution to both HRD practice by detailing the sorts of HRD activities which will enhance transfer of training and secondly, makes a contribution to theory through the creation of a new model of motivation to transfer training which features knowledge sharing behaviour.

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DECLARATION

"I, **SHAHRIL BIN BAHARIM**, declare that the PhD thesis entitled ***'The Influence of Knowledge Sharing on Motivation to Transfer Training. A Malaysian Public Sector Context'***, is no more than 100,000 words in length, exclusive of tables, figures, appendices and references. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work".

Signature: ________________________ Date: _______________

PUBLICATIONS

The following are a list of publications derived from this research.

Baharim, S & Van Gramberg, B 2005, 'The influence of knowledge sharing on transfer of training: a proposed research strategy', in: *Proceedings of the Association of Industrial Relations Academic of Australia and New Zealand Conference*, 9-11 February 2005, Sydney, Australia.

Baharim, S & Van Gramberg, B 2006, 'The influence of knowledge sharing on transfer of training: a proposed research strategy', *The ICFAI Journal of Knowledge Management*, vol.4, no.1, pp. 47-58.

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For my wife

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and my children

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CHAPTER 1
INTRODUCTION

1.1 Background to the Research

The government of Malaysia has a vision for the country to become a fully developed nation by the year 2020 (Mohamed 2003). In order to achieve this, Malaysia requires a knowledgeable and skilful workforce to compete successfully in meeting the challenges ahead. In this regard, developing human capital is a top priority of the Malaysian government (Hashim 2001). This is evidenced by a recent government announcement of an allocation of RM 33.4 billion in the 2007 national budget to further strengthen the education and training system (Ahmad Badawi 2006).

The public sector plays a vital role as an enabler and facilitator of private sector initiatives by providing efficient delivery systems and a customer-focused service. These roles lie with the approximately 1.3 million government employees working in the public sector in positions from clerical to top executives (Public Service Department of Malaysia 2006). In order to ensure that these employees are equipped with the necessary knowledge and skills, the Malaysian government has given particular attention to workplace training as a tool for improving employees' job performance. This has included programs such as management training (for example, human resource management; strategic management; financial management), computer training (for example, visual basic; database management) and general training (for example, writing skills; better spoken English) (National Institute of Public Administration Malaysia 2005).

Key to the success of training program initiatives is the extent to which trainees use their training on the job. Over the years, researchers and practitioners have acknowledged that transfer of training must occur before learning can lead to an improvement in an individual's job performance (Holton 1996; Holton, Bates &

Ruona 2000). This, in turn, represents the essence of return on investment (ROI) of training. Transfer of training has been defined as the degree to which trainees apply the knowledge and skills gained in training to their job (Ford & Weissbein 1997; Tannenbaum & Yulk 1992; Wexley & Latham 1991). The acquisition of knowledge and skills gained in training is of little value if the new characteristics are not taken back to the job setting or are not maintained over time (Bates 2003; Kozlowski & Salas 1997). Surprisingly, it has been reported that a mere 10 percent of the investment in training is returned in performance improvement (Garavaglia 1993). Despite the reported problems in training transfer in the research literature, workplace training is still viewed as a primary strategy by organisations to gain a competitive advantage. This is because the goal of training is for employees to master the knowledge and skills learned, and this in turn, is argued as being critical for successful job performance (Goldstein 1992; Noe 2005; Wexley & Latham 1991).

It has been noted that transfer of training will occur when trainees have the desire or motivation to use the knowledge and skills learned in their training (Baldwin & Ford 1988; Noe 1986; Noe & Schmitt 1986; Wexley & Latham 1991). However, little is known about factors that could affect trainees' motivation to transfer training to the job (Seyler, Holton, Bates, Burnett & Carvalho 1998; Tannenbaum & Yulk 1992). Clearly, a better understanding the factors that enhance trainees' use of their learned skills and knowledge on the job would be valuable in determining how to motivate trainees to use the knowledge and skills so that the organisation is benefited.

In the light of the importance of investment in training as a strategy for the Malaysian government (and indeed for many organisations), this thesis aims to identify the key contributing factors to transfer of training. This Chapter presents an overview of the thesis, commencing with a discussion of the contention that transfer of training and in particular, one's *motivation to transfer* one's learning, are key components to productive training program design and implementation and represent factors which will contribute to ROI of training costs. The Chapter then moves to describe the research questions driving the thesis and outlines briefly, the methodology and limitations of the research.

1.2 Research on Training and its Transfer in Malaysia

Despite a small body of literature on employee training in Malaysia, there has been very little research on transfer of training. Of the variety of studies covering different aspects of training, one observes a general agreement that a lack of understanding of training needs assessment and training evaluation inhibits human resource development (HRD) initiatives in that country. The widespread absence of these practices may have contributed to a belief that ROI on training investment is itself, illusive. For example, Zakaria and Rozhan (1993) examined the HRD practices in the manufacturing sector in Malaysia and found that despite 44 percent of surveyed firms conducting formal training, a lack of expertise amongst training managers meant that 23 percent of them did not first conduct a training needs assessment. In another study of 54 Malaysian manufacturing firms and 46 service sector firms, Poon and Othman (2000) found that although the organisations developed basic processes such as training needs assessment and training evaluation, implementation of these processes was poorly handled. Further, training needs assessment was found to be based on past data such as job content or company records to identify training needs (rather than current audits of skills gaps, for instance). Likewise, training evaluation relied on rating sheets handed out at the end of training programs to trainees and were thus highly subjective and one dimensional.

A study by Saiyadain (1995) examining attitudes towards training found that sponsoring managers (i.e., those managers directly concerned with the training activities) from smaller sized companies had relatively more negative perceptions to training than those in larger organisations. Further, training in those smaller organisations was given low priority because of the managers' inability to see tangible benefits of training. This was confirmed by Hashim (2001) who found that training evaluation was overwhelmingly reliant on reactive measures such as trainee feedback and observation rather than on other ROI measures. A related study by Saiyadain and Ali (1995) found that measurement of training effectiveness was inconsistent in Malaysian firms and that most Malaysian managers did not have formal education in management, a fact which itself, impacted negatively on their training and development efforts.

Only in one study (Hameed & Analoui 1999), was the problem of transfer in management training and development examined and this was situated in the manufacturing sector. The study revealed that among the inhibiting transfer factors in the workplace (to transfer of training occurring) were the different perceptions and understanding between staff and management; the presence of a conflicting environment (training and workplace); a lack of recognition; and constraints relating to company's policies and procedures.

Although the studies described above have contributed greatly to the collective knowledge in managerial training in a Malaysian setting, they represent a very small body of research which has had little impact on HRD practice. This was confirmed by the survey of the literature on training and development of managers in Malaysia by Saiyadain and Ali (1995) who indicated that there was a dearth of published empirical material on managerial training. Since then, the study by Hashim (2001) marks the only recent contribution to the field.

HRD researchers have acknowledged that the role of training has changed from a program focus to a broader focus on learning and creating and sharing knowledge (Martocchio & Baldwin 1997; Noe 2005; Noe, Hollenbeck, Gerhart & Wright 2004). Employees are expected to acquire new skills and knowledge, apply them on the job and share this information with fellow workers (Noe 2005). However, in the context of the Malaysian public sector, research investigating how *knowledge sharing* could play its role in transfer of training has been neglected. This thesis, therefore, sets itself squarely in the research gap with the aim of contributing to the HRD discipline in Malaysia through a comprehensive study of factors which promote transfer of training in the Malaysian public sector.

1.3 Purpose and Research Questions

Research suggests that transfer factors vary across organisations, training types and trainees' demographics and they vary between being strong and weak with respect to their effect on transfer itself (Chen 2003; Donovan, Hannigan & Crowe 2001; Holton, Chen & Naquin 2003; Yamnill 2001). This means that organisations wishing to enhance ROI from training must understand all the transfer factors and intervene to remove factors that inhibit transfer. Key to this discussion is that researchers and practitioners have acknowledged that transfer of training will occur only when trainees have the desire or motivation to transfer their training on the job (Baldwin & Ford 1988; Noe 1986; Noe & Schmitt 1986; Wexley & Latham 1991). It follows that organisations would be well advised to identify the factors that enhance trainees' *motivation to transfer* their training particularly as the goal of most training is for trainees to master the knowledge and skills required to perform well in their daily job (Noe 2005).

This thesis contributes to a greater understanding of the nature of the motivational factors which underpin trainees' desire to transfer what they have learned into their everyday jobs. The thesis also tests the hypothesis that knowledge sharing behaviour also influences a trainee's motivation to transfer their training. Preliminary evidence on the concept of knowledge sharing behaviour (Noe et al. 2004) demonstrates that it plays some role in transfer of training by acting through trainee motivational factors.

Two key models were used to explore the areas of motivation and knowledge sharing. First, using the Human Resource Development Evaluation Research and Measurement Model (the HRD model) developed by Holton (1996), this thesis focuses on the contribution to trainee motivation of 16 variables identified Holton's model as:

1. secondary influence variables (*performance-self efficacy* and *learner readiness*);
2. expected utility variables (*transfer effort-performance expectations* and *performance-outcomes expectations*);
3. transfer climate variables (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative* and *supervisor sanctions*);
4. ability variables (*personal capacity for transfer* and *opportunity to use*); and
5. enabling variables (*content validity* and *transfer design*)

The second model used in this thesis is the Theory of Planned Behaviour (TPB) model devised by Ajen (1991) (see Chapter 3) from which the knowledge sharing behaviour variables were tested. Thus, the conceptual framework for this thesis amends the model by Holton (1996) by incorporating the sharing behaviour elements (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing)* to provide a more expanded view of the transfer of training framework. It should be noted that Holton did not consider knowledge sharing in his HRD model.

The development of the research questions for this study arose in response to the paucity of research investigating the question of how transfer of training variables and the variables associated with sharing behaviour perform in the Malaysian public sector. Research questions one and two explore the similarities and differences of transfer of training and sharing behaviour across three training types (general training; management/leadership training; computer training) and demographics (gender; age; level of education; work experience; position of employment) respectively. These two research questions are important because it gives important information on which transfer of training variables are strong, weak or moderate. Having the knowledge on which transfer variables were strong, moderate or poor may assists the researcher to proceed with further analysis to identify which among the strong variables are significant in explaining the variation in motivation to transfer training. This thesis anticipates that there is no significant difference in these variables across training types and demographics and that the variables can be generalised. This issue is taken up in Chapter 3.

Research question three was devised to explore which variables explain the variation in *motivation to transfer* and thus provides information allowing the development of recommendations to HRD managers on how to improve trainees' *motivation to transfer* their training. Research questions four to six were devised to explore the possible linkages between *sharing behaviour* and *motivation to transfer*, to explore trainees' *intention to share* and to explore the direct and indirect relationships (via the significant predictors identified in research question three) between *sharing behaviour* and *motivation to transfer*. The six research questions are listed below:

Research Question One:

Which of these transfer of training variables:

- *motivation to transfer*;
- secondary influences (*performance-self efficacy, learner readiness*);
- expected utility (*transfer effort-performance expectations, performance-outcomes expectations*);
- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*);
- enabling (*content validity, transfer design*); and
- TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing)* are significantly different in terms of their mean score across different training types (general training, management/leadership training, computer training)?

Research Question Two:

Which of these transfer of training variables:

- *motivation to transfer*;
- secondary influences (*performance-self efficacy, learner readiness*);
- expected utility (*transfer effort-performance expectations, performance-outcomes expectations*);
- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*),
- enabling (*content validity, transfer design*); and
- TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean score across trainees' demographics (gender, age, level of education, work experience, position of employment)?

Research Question Three:

Which of these transfer of training variables:

- secondary influences *(performance-self efficacy, learner readiness*);
- expected utility *(transfer effort-performance expectations, performance-outcomes expectations*);
- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*); and
- enabling (*content validity, transfer design*) serve as key significant predictors of one's motivation to transfer training?

Research Question Four:

Is the variable: *intention to share* significantly correlated with *sharing behaviour* and is *sharing behaviour* significantly correlated with *motivation to transfer*?

Research Question Five:

What are the significant predictors of *intention to share*?

Research Question Six:

What are the direct and indirect relationships (via the significant predictors identified in research question three) between *sharing behaviour* and *motivation to transfer*?

Figure 1.1 depicts the conceptual framework used in this thesis to answer the research questions and Chapter 3 discusses the framework in detail. As discussed briefly above, the conceptual framework was designed to explore the thesis that trainees' *motivation to transfer* training is influenced by a number of secondary influences variables, expected utility variables, transfer climate variables, enabling variables and ability variables. The three antecedents to *intention to share* are also included in the framework along with *perceived behavioural control toward knowledge sharing*. Table 1.1 provides the definitions of the variables used in this thesis based on those identified by Holton, Bates and Ruona (2000) and Ajzen (1991) respectively.

Figure 1.1 The Conceptual Framework

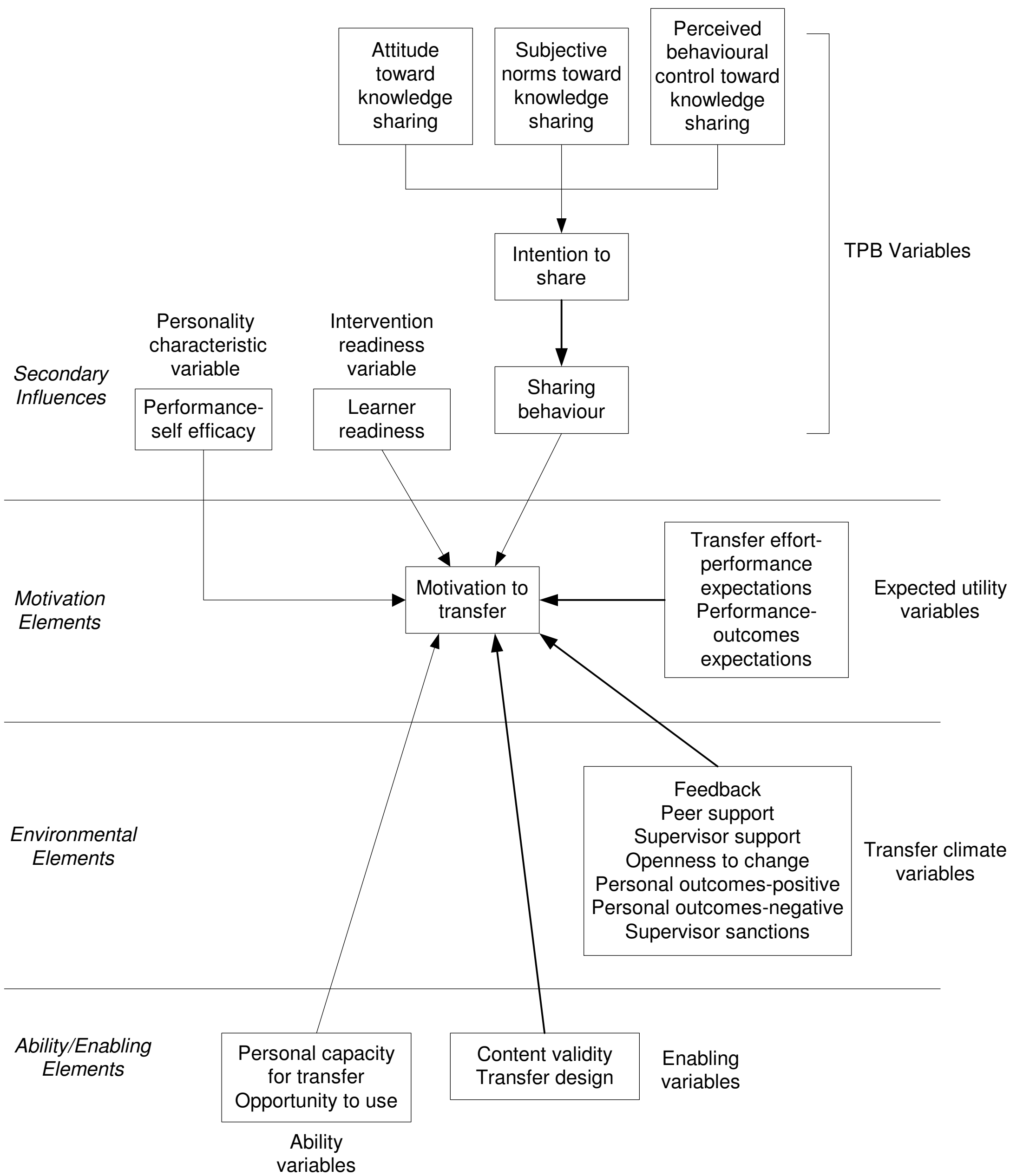


Table 1.1 The Definitions of the Variables

No	Variables	Definition
1	Learner readiness	Extent to which trainees are prepared to enter and participate in training .
2	Motivation to transfer	Trainees' desire to use the knowledge and skills mastered in the training program on the job.
3	Peer support	Extent to which peers reinforce and support use of learning to the job.
4	Supervisor support	Extent to which supervisors/managers support and reinforce use of training on the job.
5	Personal outcomes-positive	Degree to which applying training on the job leads to outcomes that is positive for the trainees.
6	Personal outcomes-negative	Extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes.
7	Supervisor sanctions	Extent to which individuals perceive negative responses from supervisors/managers when applying skills learned in training.
8	Content validity	Extent to which trainees judge training content to accurately reflect job requirements
9	Transfer design	Degree to which (1) training has been designed and delivered to give trainees the ability to transfer learning to the job (2) training instructions match job requirements.
10	Personal capacity for transfer	Extent to which individuals have the time, energy and mental space in their work lives to make changes required to transfer learning to the job.
11	Opportunity to use	Extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job.
12	Performance self efficacy	Trainee's general belief that they are able to change their performance when they want to.
13	Transfer effort-performance expectations	Expectation that effort devoted to transferring learning will lead to changes in job performance.
14	Performance-outcomes expectations	Expectation that changes in job performance will lead to valued outcomes.
15	Feedback	Formal and informal indicators from an organisation about an individual's job performance
16	Openness to change	Extent to which prevailing group norms are perceived by trainees' to resist or discourage the use of skills and knowledge acquired in training.

Source: Holton, EF III., Bates RA & Ruona, WEA 2000, 'The development of a generalised learning transfer system inventory', *Human Resource Development Quarterly*, vol.11, no.4, pp.333-360.

17	Sharing behaviour	The degree to which trainees actually share the learned knowledge and skills in the workplace.
18	Intention to share	The degree to which trainees are willing to share the learned knowledge and skills in the workplace.
19	Attitude toward knowledge sharing	Trainees' positive or negative evaluations on sharing the learned knowledge and skills in the workplace.
20	Subjective norm toward knowledge sharing	Perceived social pressure to share the learned knowledge and skills in the workplace.
21	Perceived behavioural control toward knowledge sharing	Perceived ease or difficulty of sharing the learned knowledge and skills in the workplace.

Source: Variables 17 to 21 adapted from Ajzen, I 1991, 'The theory of planned behaviour', *Organisational Behaviour and Human Decision Processes*, vol.50, pp.179-221.

1.4 Justification for the Research

The justification for this thesis is twofold: First, it addresses a key gap in the research and theory on transfer of training through identifying the key variables linked with increasing the likelihood that trainees will transfer their learning onto the job. This is particularly important in a Malaysian context where there is a scarcity of contemporary research in the area. Second, and related to the first, the thesis is justified as it will provide HRD managers with the tools to enhance transfer of training and thus ROI on training course implementation.

1.4.1 Significance of the Thesis

The thesis makes a number of contributions in transfer of training research. Notably, it is the first empirical study in the Malaysian public sector to investigate factors which contribute to trainees' *motivation to transfer* training. Using the HRD model (Holton 1996), the thesis examines the hypothesised relationships depicted in the research framework (see Figure 1.1). Second, by including knowledge *sharing behaviour* in the basic Holton (1996) model, it extends both the HRD model and the TBP model (Ajzen 1991) in predicting trainees' intention to share their learned knowledge and skills in the workplace. Third, the thesis contributes to the design of methodology in transfer of training research through validating the constructs under study using exploratory and confirmatory factor analysis. There is a need for a well-validated and generalised instrument to measure transfer of training factors, particularly in the Malaysian public sector where there has been little research. Having a well-validated and generalised instrument to measure the transfer factors is important to ensure confidence in the results obtained.

In addition to its academic significance, the findings of the thesis have implications for the practice of HRD. For instance research questions one and two provide HRD managers in the Malaysian public sector with the ability to identify the variables that increase transfer of training behaviours and intervene to reduce those variables that do not enhance transfer. Through the identification of these factors, the thesis also contributes to training evaluation practices which reflect transfer of training as an

ROI measure taking into account specific trainee personality characteristics, the transfer climate and transfer design conducive to optimal transfer of training outcomes. Similarly, the findings from research question three provide a better understanding of the factors that motivate trainees to transfer training to the job which can be used by HRD managers to enhance training design and preparation of trainees. Finally, the findings from research questions four, five and six will contribute to HRD managers' understanding of *sharing behaviour* as a potential factor in motivating trainees to transfer training to the job. The implications described above are important for HRD practices in the Malaysian public sector to close the gap between what is learned as a result of training and what is applied on the job. This may contribute to greater productivity and ROI in training.

1.5 Research Approach

A cross sectional study of the Malaysian public sector was used in this thesis with a survey questionnaire as the main instrument for data collection. The sample chosen consisted of government employees attending training at the National Institute of Public Administration, a central training organisation for government employees in Malaysia. The instrument consisted of an 87 Likert item questionnaire, ranging from '1 = Strongly Disagree' to '5 = Strongly Agree' which was designed to measure the constructs under study. Given the importance of questionnaire design to ensure valid and reliable measurement of all the variables under study, the framework of Churchill (1979), Spector (1992) and Cavana, Delahaye and Sekaran (2001) in questionnaire design were adopted and modified to suit the needs of this thesis. Questionnaire design and administration is discussed in Chapter 3.

1.6 Outline of the Thesis

This thesis is arranged into eight Chapters, a bibliography and appendices. This Chapter has described the research background, research problem, and the justification for conducting the research. Chapter 2 commences the literature review with a discussion of the concepts of training, transfer of training and what is meant by *motivation to transfer* training. The two key training evaluation models used in this study are also detailed and compared to gain greater understanding into the many factors which influence trainees' *motivation to transfer* training. The theory of planned behaviour (Ajzen 1991) is also discussed in Chapter 2 which is used in this thesis to examine trainees' *sharing behaviour* in the workplace.

Chapter 3 develops the conceptual framework based on the two key models by Holton (1996) and Aizen (1991). The Chapter describes the formulation of hypotheses and details the methodology chosen for data collection and analysis. The Chapter concludes with a discussion of the questionnaire design and how it was administered. Chapter 4 continues the methodology section through an assessment of the questionnaire's construct validity and reliability using exploratory factor analysis, confirmatory factor analysis and Cronbach's alpha. The Chapter demonstrates that all measures have good psychometric properties (validity and reliability) and are thus appropriate to investigate the relationships hypothesised in this thesis.

The testing of the hypotheses belonging to research questions one and two are discussed in Chapter 5 while Chapter 6 discusses the testing of hypotheses for the remaining four research questions. Chapter 5 reveals that transfer of training variables did not vary much across the three training types (general training; management/leadership training; computer training) and demographics (gender; age; level of education; work experience; position of employment). The Chapter highlights the weak and strong variables with respect to motivation to transfer and discusses the factors which promote and inhibit transfer of training.

Chapter 6 continues with the testing of hypotheses for research question three, four, five and six and answers research questions three to six. The evolution of the hypothesised structural model to the development of the final structural model is detailed, demonstrating that the thesis makes a key contribution in adding sharing behaviour to the traditional HRD models of motivation to transfer training.

Chapter 7 discusses the managerial implications, research limitations and suggestions for future research agenda. The Chapter stresses the importance for HRD practices in the Malaysian public sector to diagnose transfer of training variables strategically and intervene to prevent the operation of variables that inhibit transfer. The Chapter provides advice to HRD managers at two broad levels: pre-training level and post-training to assist them enhance motivation to transfer. Finally, Chapter 8 concludes this study with a summary of the main points from each chapter and lists the major observations arising from the empirical research and the surrounding literature.

1.7 Research Limitations and Assumptions

Whilst this thesis makes a significant contribution to research, theory and HRD application of transfer of training factors, it is acknowledged that there are several limitations of the study and that a number of assumptions had to be made along the way in order to operationalise the research questions. These limitations necessarily affect the generalisability of the findings and are discussed below:

First, the data were collected from a purposive sampling of government employees attending training at the National Institute of Public Administration, Malaysia in the month of August 2005 until September 2005. This means that trainees in this study represent only a sub-sample of all trainees attending training in the year 2005. Thus, the findings should be generalised with some caution even within the Malaysian public sector.

Second, this study uses self-reporting for all the variables under investigations. It is acknowledged that results of a single source of data may be affected by method variance (Podsakoff & Organ 1986). For example, *motivation to transfer* training is based solely on trainees' perceptions but not assessed by their supervisors. Obtaining data from supervisors on what can motivate trainees to transfer their training could increase confidence in the results. It is an area for future research but was outside of the practical limits of the present work.

Third, the number of variables used when modelling with Structural Equation Modelling was kept as a manageable set due to the small sample size obtained in this study. The researcher recognised that there are other potential variables such as learning, *opportunity to use* and *transfer design* that may have an impact on *motivation to transfer* training and these, again may be used to broaden the research framework in future research.

Fourth, although the scales used in this study fell within the desired range of validity and reliability, they were not tested against a different set of data due to the difficulty in obtaining a large number of respondents at this time of study for this purpose. This was largely due to a number of training programs being cancelled due to low participation and accommodation problems. Using a different set of data for construct reliability and validity may have increased further the confidence in the results obtained.

Finally, for modelling with SEM in this study, the final structural model was revised to improve fit. Again, this means that the findings reported in this thesis should only be generalised with caution.

Apart from the limitations listed above, this thesis proceeded on the basis of two key assumptions. First, the items in the questionnaire were held to cover all the variables under investigation. This assumption was checked and validated by two panel experts in Malaysia but nevertheless, given the size of the study, it is open to speculation that further factors may be elucidated. Second, the study relied on the assumption that the respondents answered the questionnaire truthfully.

1.8 Summary

This Chapter laid the foundations for the thesis by noting the significant gap in transfer of training research in the Malaysian public sector and the lack of adequate evaluation to ensure that the training was being transferred back into the workplace.

The Chapter indicated that this study situates itself in this research and HRD knowledge gap with its objectives to identify more closely, the factors which contribute to transfer of training, motivation to transfer and to test whether knowledge sharing behaviour plays a role in the transfer of training regime. The Chapter then moved to a discussion of the justifications for the research, both academic and managerial, concluding that significant contributions are expected through its modification of the key academic transfer models and through the recommendations for HRD practice which may enhance return on investment for the training effort. The next Chapter traces the key international literature on transfer of training, motivation to transfer training and knowledge sharing behaviour in the workplace.

CHAPTER 2

TRANSFER OF TRAINING: A REVIEW OF THE RESEARCH LITERATURE

2.1 Introduction

Chapter 1 outlined the background for this thesis indicating that transfer of training research has been sparse in Malaysia despite increasing pressure on the public sector to deliver a return on investment in terms of improved training transfer and the productivity gains likely to accompany this. The Chapter described preliminary evidence suggesting that motivation is a factor which enhances training transfer.

Chapter 2 aims to set the research problem in its academic context by canvassing the international research literature on transfer of training before moving to a detailed discussion of the concept of motivation to transfer. First, the Chapter outlines the various definitions of training and transfer of training in order to set a base line for understanding the operational variables in this area. The Chapter then sets out the definitions of motivation to transfer training and the third section explores the factors which may influence trainees' *motivations to transfer* their training by considering the evolution of several key training evaluation models: the Kirkpatrick (1994) four level evaluation model and the Learning Transfer System Inventory (LTSI) (Holton et al. 2000). The Human Resource Development Evaluation Research and Measurement Model (the HRD model) (Holton 1996) is described in the fourth section of this Chapter. The HRD model was the first attempt to comprehensively specify factors that can influence trainee's *motivation to transfer* training both directly and indirectly. As discussed in Chapter 1, the HRD model failed to include the concept of knowledge *sharing behaviour* as a variable which influences transfer of training. This is addressed in the final section of this chapter which draws together a discussion of knowledge *sharing behaviour* and describes its benefits. It is hypothesised in this thesis that knowledge *sharing behaviour* plays a role in facilitating transfer of training. For this reason, TPB theory (Ajzen 1991) is discussed within a framework that explains a trainee's intention to share the knowledge and skills learned in training with others in the workplace

2.2 Training and Transfer of Training

The International Encyclopaedia of Adult Education and Training (1996:519) defined training as the provision that is aimed at creating intentional learning processes that contribute to improving the performance of workers in their present job. The definition does not differ significantly from definitions of training in the HRD context. For instance, in an HRD environment, training is often defined as a planned learning experience designed to bring about permanent change in an individual.'s knowledge, attitudes, or skills (Campbell, Dunnete, Lawler & Weick 1970:497). Goldstein (1992:3) provided a definition that related training to individual performance which is, arguably, a more apt descriptor of HRD objectives. He defined training as the systematic acquisition of attitudes, concepts, knowledge, roles or skills that result in improved performance at work. Generally, it has been found that most workplace training definitions in the international literature emphasise the current job as the focus. For instance, Tziner, Haccoun and Kadish (1991) noted that the fundamental purpose of training is to help people develop skills and abilities which, when applied at work, will enhance their average job performance in their current job. The definition provided by Tziner et al. (1991) links the acquisition of knowledge and skills gained through training to an application in the workplace. This link represents the concept of training transfer.

Transfer of training is generally defined as the degree to which trainees apply the knowledge, skills and attitudes gained in training to their job (Ford & Weissbein 1997; Tannenbaum & Yulk 1992; Wexley & Latham 1991). Most researchers used the terms 'transfer of training' and 'transfer of learning' interchangeably to refer to the application of the knowledge and skills learned in training back to the job. The application of these skills has also been described as an ongoing exercise rather than a once-off task. In this sense, transfer of training has been described as the maintenance of skills, knowledge and attitudes over a certain period of time (Baldwin & Ford 1988).

Transfer of training needs to be considered as a multidimensional construct because different authors view transfer of training differently, attributing a variety of features to its definition. For example, Wexley and Latham (1991) suggest that transfer can be measured as a positive, negative or a zero. Positive transfer occurs when learning in the training situation results in better performance on the job. This reflects the general assumption behind most definitions of transfer of training. Negative transfer occurs when learning in the training situation results in poorer performance on the job. Zero transfer, not surprisingly, occurs when learning in the training situation has no effect on the job performance.

Other researchers have provided different insights into transfer of training. For example, Cormier and Hagman (1987) considered it to consist of two elements: general or specific transfer. On this view, general transfer refers to the application of learned knowledge and skills to a higher level or to a more complex work situation. It occurs when a trainee has grasped the generic skills or concepts and generalised their application (for instance, problem solving). Specific transfer occurs when the trainee can apply what has been learned in the training environment to a similar work situation (for instance, learning to use a word processor in training with application of that learning at work).

Finally, Laker (1990) proposed a distinction between near transfer and far transfer in a training context. According to this author, near transfer occurs when trainees apply what was acquired in training to situations very similar to those in which they were trained. Far transfer, in contrast, occurs when trainees apply the training to different situations from the ones in which they were trained.

Regardless how the transfer of training elements have been described, there has been general agreement amongst researchers that transfer of training is a critical issue in HRD. For instance, Baldwin and Ford (1988), in their early model of the transfer process provided HRD researchers and practitioners of organisational training with an understanding of the range of factors affecting transfer of training include a range of trainee characteristics, the training course design and the type of work environment. Further, many researchers in this area have emphasised that any effort taken to evaluate training effectiveness must look for these elements of transfer of training (Broad & Newstrom 1992; Kirkpatrick 1994; Noe 2005; Noe et al. 2004). According to Bates (2003), training can do little to increase individual or organisational performance unless what is learned as a result of training is transferred to the job.

The gap between what is learned and what is applied on the job represents, at least in HRD terms, a massive transfer problem (Baldwin & Ford 1988; Broad & Newstrom 1992; Ford 1994). In one study, Broad and Newstrom (1992) surveyed 85 trainees and asked them how much of the material learned was used on the job over time. The responses were: immediately – 41 percent; six months later - 24 percent; and one year later – 15 percent. Broad and Newstrom (1992) also noted that the lack of involvement of line managers and the lack of reinforcement on the job were major barriers to the transfer of training. Not surprisingly, it has been reported in the literature that a mere of 10 percent of the investment in training is returned in performance improvement (Garavaglia 1993; Georgenson 1982).

Despite the reported problems in achieving effective transfer of training reported in the international HRD research, the training and development of employees continues to be viewed as a key strategy for organisations to gain a competitive advantage (Goldstein 1992; Noe 2005; Wexley & Latham 1991). One factor which stands out in the literature as a contributor to more effective transfer has been the extent to which trainees are motivated to use their training on the job. The next section considers the research on *motivation to transfer* training.

2.3 Motivation to Transfer Training

Many researchers have acknowledged that transfer of training will occur only when trainees have the motivation or desire to use the learned knowledge and skills on the job (Baldwin & Ford 1988; Noe 1986; Noe & Schmitt 1986; Wexley & Latham 1991). Arguably, without motivation to transfer, even the most systematic training program will struggle to be effective. However, little is known about the specific factors that impact on a trainee's *motivation to transfer* training to the job (Seyler et. al. 1998; Tannenbaum & Yulk 1992).

As this thesis is concerned with uncovering factors that could influence a trainee's *motivation to transfer* his or her training to the job, it is pertinent to examine the two key training evaluation models in the HRD literature. The Kirkpatrick (1994) training evaluation model (see 2.3.1 below) and the Learning Transfer System Inventory (see 2.3.2 below) (Holton et al. 2000) have received the most attention by researchers in the area of training evaluation. Other training evaluation models such as developed by Hamblin (1974), Phillips (1995) and (Brinkerhoff 1987) are not discussed because they are encompassed in the extended version of Kirkpatrick's (1994) model. For example, Hamblin (1974) included economic benefits (in a five-level model) while Brinkerhoff (1987) proposed a six-level model. Phillips (1995) focused on return on investment in his model. Although each of these other authors' work contributes greatly to the knowledge in training evaluation, their models largely mirror Kirkpatrick's model and it is to this model the thesis now turns.

2.3.1 The Kirkpatrick Model

The Kirkpatrick (1994) model of training evaluation, also known as the four-level evaluation model, has dominated the field of training evaluation for more than 30 years (Alliger & Janak 1989; Alliger, Tannenbaum, Bennet, Traver & Shortland 1997). As depicted in Figure 2.1 below, the model consists of four stages: reaction→learning→behaviour →results. Kirkpatrick (1994) described reaction, learning, behaviour and results as training outcomes (measures that organisations use to evaluate training programs) that an intervention (the training course) hopes to create.

Figure 2.1 The Kirkpatrick Four Level Evaluation Model

Level 1	Reaction
Level 2	Learning
Level 3	Behaviour
Level 4	Results

Source: Adapted from Kirkpatrick, DL 1994, Evaluating training programs. The Four Levels, Berrett-Koehler Publishers, San Francisco.

Based on the model, reaction is the first level in the evaluation process and is defined as how well the trainees were satisfied with a particular training program (Kirkpatrick 1994:27). According to Kirkpatrick, evaluating reaction is important for several reasons. First, it will give valuable feedback and suggestions for improving future training programs. Second, it tells trainees that the trainers are there to help them do their job better and that they need feedback to determine how effective they are. Third, reaction sheets can provide quantitative information to managers and those who concerned about the program as well as to establish standards of performance for future training programs. In order for trainers to get maximum benefit from reaction measures, Kirkpatrick (1994:28) provided guidelines for evaluating reaction that included: designing a form that will quantify the reaction to training; encouraging written comments and suggestions which can be useful in the redesign of the training course; aiming for a 100 percent response; developing acceptable standards (for instance, standards for instructors or facilities) and to measure reactions against standards.

Next, learning was defined as the extent to which trainees change their attitudes, improve their knowledge and increase their skills as a result of attending training (Kirkpatrick 1994:42). Kirkpatrick stressed that evaluating learning is important because no change in behaviour (level 3) can be expected unless learning objectives have been accomplished. The suggested guidelines for learning included using a control group (if practical); using a paper-and-pencil test to evaluate the learned knowledge and skills both before and after the program and using the evaluation results to take appropriate action, particularly for trainers to work on being more effective in teaching in the future (Kirkpatrick 1994:43).

Behaviour is the third level in the evaluation process and is defined as the extent to which change in behaviour has occurred because the trainee attended the training program (Kirkpatrick 1994:52). This level attempts to measure how much transfer of knowledge, skills, and attitudes occurs. Kirkpatrick stressed that it is important to see whether the knowledge and skills learned in the training program were transferred to the job. However, he warned that no evaluation should be attempted until trainees had an opportunity to use the new learning. Thus, for some training programs, two or three months after training may be appropriate. Evaluating learning behaviour can be done by using surveys or through interviewing one (or more) of the trainees, their immediate supervisor, their subordinates and others who are knowledgeable about their behaviour (Kikpatrick 1994:55).

Finally, level four of the Kirkpatrick model is the evaluation of results. Results can be defined as what occurred as a consequence of the trainees attending the training program (Kirkpatrick 1994:63). Kirkpatrick used this fourth level to relate the results of the training program to organisational objectives (for instance, increased production, improved quality, decreased costs, increased sales and higher profits). He stressed that the final objectives of the training program need to be stated according to the organisational objectives for optimal return on investment. The suggested guidelines to evaluate results included using a control group (to eliminate factors other than training that could have caused the changes observed); measuring both before and after the training program and considering cost versus benefits (the value of the actual results compared to the cost of the training program).

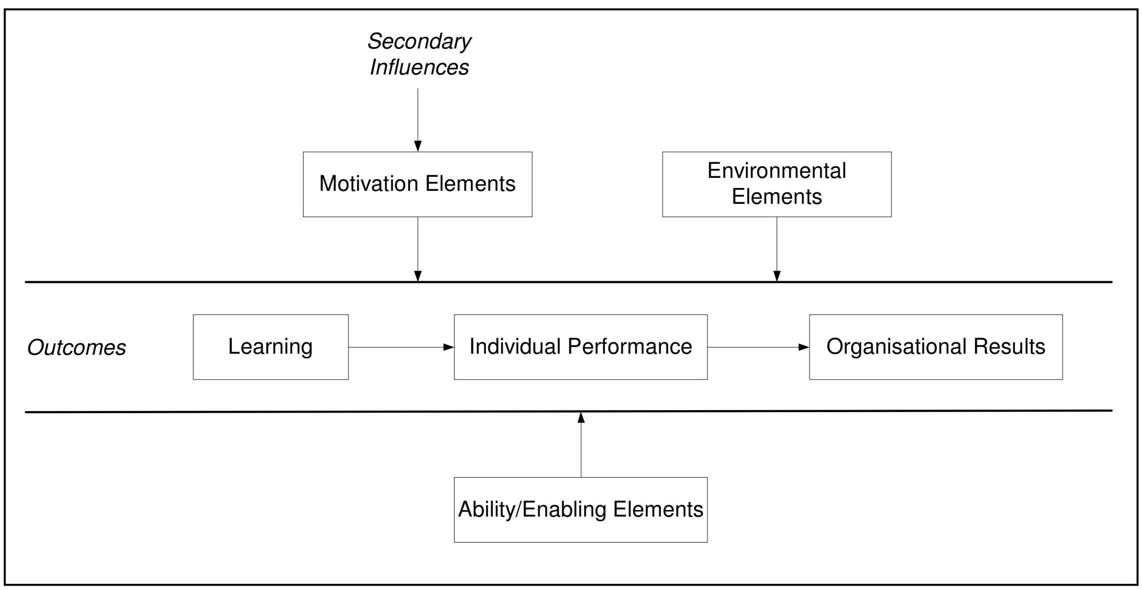
According to Kirkpatrick (1994) there is a natural flow between the levels in the model. Reaction could lead to learning; learning could lead to behaviour change; and change in behaviour could lead to positive organisational results. As the model depicted only four variables (reaction, learning, behaviour and results) the effect of trainees' motivation to transfer training to the job was not an overt consideration of Kirkpatrick's. However, it is likely that motivation was an assumption underpinning the model as Kirkpatrick (1994:51) wrote that 'without learning, no change in behaviour will occur'. This corresponds broadly with research which has demonstrated that changes in behaviour occur when trainees are motivated to use their training on the job (Holton 1996; Noe & Schmitt 1986; Seyler et. al. 1998). The findings from previous studies have also shown that other variables lying outside the training classroom also affect behaviour change (Baldwin, Magjuka & Loher 1991; Hicks & Klimoski 1987). These external factors have been identified as the transfer climate (Holton, Bates, Seyler & Carvalho 1997; Rouiller & Goldstein 1993), workplace design (Kupritz 2002) and personality characteristic variables such as self-efficacy (Gist 1989; Gist, Schwoerer & Rosen 1989; Gist, Steven & Bavetta 1991) and readiness to participate in training could also affect behaviour change.

Despite its dominance in the field, as described above, the Kirkpatrick (1994) model did not provide a strong guide to understanding what influences trainees' motivation to use training. In light of more recent literature on motivation, this could be a key omission in this traditional model. It is relevant then to turn to the other dominant training evaluation model in the HRD literature: the Learning Transfer System Inventory (LTSI) developed by Holton, Bates and Ruona (2000).

2.3.2 The Learning Transfer System Inventory (LTSI)

According to Holton, Bates and Ruona (2000), organisations wishing to enhance the ROI from training need to understand the factors that affect transfer of training and then intervene to remove the factors which inhibit transfer. Indeed, the authors argued that the first step to improving transfer is to accurately diagnose the inhibiting factors. In their 2000 study titled "*Development of a Generalised Learning Transfer System Inventory*", they introduced the concept of transfer system which encompassed factors in the person, training and organisation that influence transfer of learning to job performance.

Figure 2.2 The LTSI Conceptual Evaluation Model



Source: Adapted from Holton, EF III 1996, 'The Flawed Four-Level Evaluation Model,' *Human Resource Development Quarterly*, vol.7, no.1, p.9.

The LTSI conceptual evaluation model used to develop the LTSI is depicted in Figure 2.2. Three primary training outcomes were defined in this model. These outcomes were: learning; individual performance; and organisational results. Learning was defined as: achievement of the learning outcomes desired in an intervention; change in individual performance as a result of the learning being applied on the job; and results at the organisational level as a consequence of the change in individual performance (Holton 1996:9). In comparison with Kirkpatrick's (1994) training evaluation model, three primary differences are of note. First, there is an absence of reaction as a training outcome in the LTSI. Holton, Bates and Ruona (2000) argued that reactions should be removed from evaluation models citing several studies which indicated that reactions had no significant relationship with learning (Alliger and Janak 1989; Dixon 1990; Noe & Schmitt 1986; Warr & Bunce 1995). For example, Warr and Bunce (1995) divided reactions into three components (enjoyment, usefulness and perceived difficulty) and they found no significant correlation between any of them and learning outcomes.

Second, individual performance is used instead of behaviour in the Kirkpatrick (1994) model because Holton et al. (2000) claimed that individual performance is a broader construct than behaviour change and a more appropriate descriptor of HRD objectives. And third, the LTSI conceptual model is arguably a more comprehensive model than the Kirkpatrick (1994) model because it accounts for the impact of motivation, environmental and ability/enabling elements.

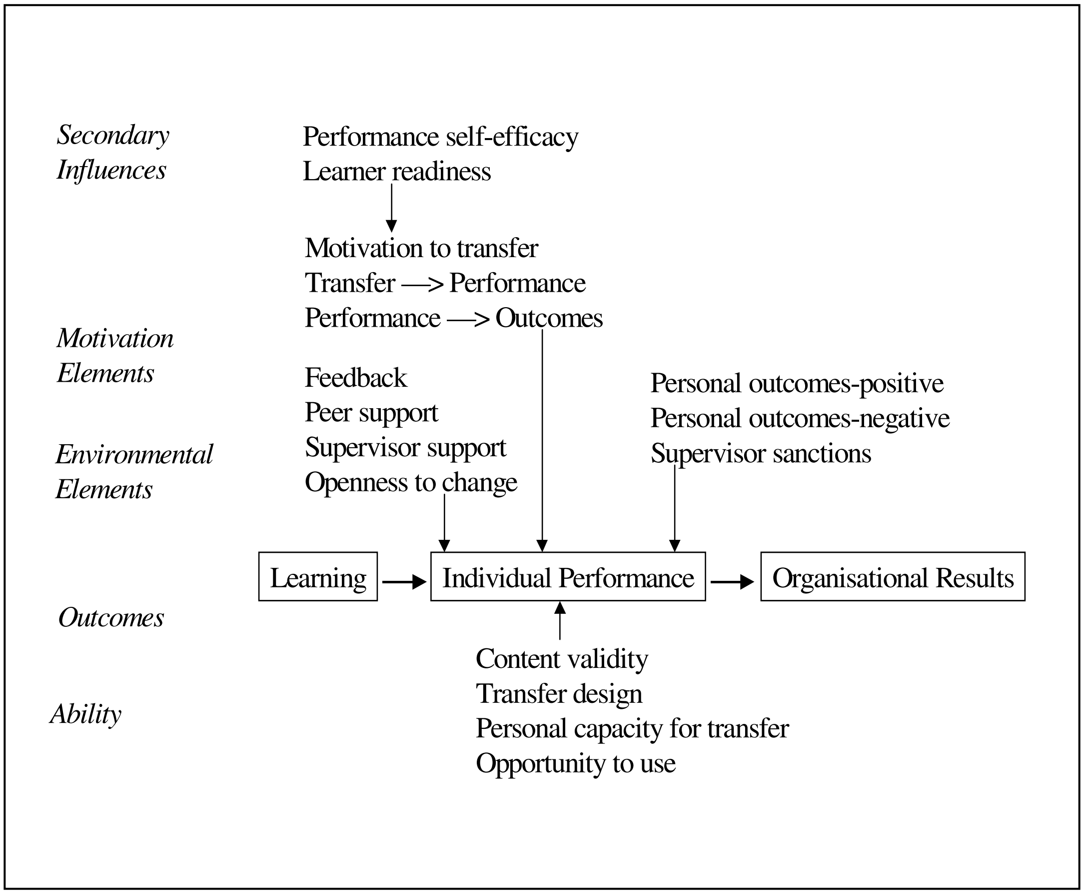
The evolution of the LTSI into its present form occurred across the late 1990s. Following the development of Holton's (1996) conceptual evaluation model (Figure 2.2), a study by Holton, Bates, Seyler and Carvalho's (1997) identified a number of climate variables which affect transfer of training. In this 1997 study, the authors found that trainees perceived transfer climate according to referents to their organisation (for example supervisor, peer/task, or self) and the factor analysis in this study extracted seven transfer climate constructs. These constructs are detailed in Table 2.1 and listed below:

- *supervisor support* (a supervisor's reinforcement of use of training on the job); opportunity to use (trainees are provided with resources enabling them to use training on the job);
- *peer support* (peers support use of learning to the job);

- *supervisor sanctions* (perception of negative responses from supervisors when applying skills learned in training);
- *personal outcomes-positive* (applying training on the job leads to positive outcomes for trainees);
- *personal outcomes-negative* (applying training on the job leads to negative outcomes for trainees); and
- *openness to change* (prevailing group norms discourage the use of skills and knowledge acquired in training)

Further, factor analysis from the data also suggested two further transfer design constructs: *content validity* (trainees judge training content to accurately reflect job requirements) and *transfer design* (training has been designed to provide ability to transfer learning to the job and instructions match job requirements). The authors then searched the literature on transfer of training to identify seven other constructs that had not been previously tested in Holton et al.'s (1997) study but which they believed, would fit into the conceptual model. The seven additional variables are detailed in Table 2.1 and comprise *performance-self efficacy* (the belief that trainees are able to change their performance when they want to) (Gist 1989; Gist et al. 1989; Gist et al. 1991); two expectancy related variables: *transfer effort-performance expectations* and *performance-outcomes expectations* (expectation that effort devoted to transferring learning will lead to changes in job performance and outcomes respectively) (Bates & Holton 1999; Noe & Schmitt 1986); *personal capacity for transfer* (trainees make the changes required to transfer learning to the job) (Ford, Quinones, Sego & Sorra 1992); *feedback* (formal and informal indicators about an individual's job performance); *learner readiness* (trainees prepared to participate in training) (Knowles, Holton & Swanson 1998); and *motivation to transfer* (trainees' desire to use the knowledge and skills mastered in the training program on the job) (Noe 1986; Noe & Schmitt 1986). Figure 2.3 shows how the sixteen variables fit into the conceptual model and Table 2.1 provides definitions for each of the 16 final transfer variables.

Figure 2.3 The Learning Transfer System Inventory (LTSI)



Source: Holton, EF III, Bates, RA & Ruona WEA 2000, 'The development of a generalised learning transfer system inventory,' *Human Resource Development Quarterly*, vol.11, no.4, p.339.

Figure 2.3 shows how the LTSI accounts for the impact of primary variables such as environmental, ability and motivational variables. The LTSI indicates that *motivation to transfer* is influenced by secondary variables such as *performance-self efficacy* and *learner readiness*. Holton et al. (2000) refer to the variables affecting an individual's performance in the LTSI as a transfer system, which they defined as all the factors in the person, training and organisation that influence transfer of learning to job performance. In other words, they argued that transfer must occur before learning can lead to individual job performance. Table 2.1 below details the definitions of the variables as depicted in the LTSI.

Table 2.1: The 16 factors of the LTSI which affect transfer of training

No	Variables	Definition
1	Learner Readiness	Extent to which trainees are prepared to enter and participate in training.
2	Motivation to Transfer	Trainees' desire to use the knowledge and skills mastered in the training program on the job.
3	Peer Support	Extent to which peers reinforce and support use of learning to the job.
4	Supervisor Support	Extent to which supervisors/managers support and reinforce use of training on the job.
5	Personal Outcomes-positive	Degree to which applying training on the job leads to outcomes that is positive for the trainees.
6	Personal Outcomes-negative	Extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes.
7	Supervisor Sanctions	Extent to which individuals perceive negative responses from supervisors/managers when applying skills learned in training.
8	Content Validity	Extent to which trainees judge training content to accurately reflect job requirements
9	Transfer Design	Degree to which (1) training has been designed and delivered to give trainees the ability to transfer learning to the job (2) training instructions match job requirements.
10	Personal Capacity to Transfer	Extent to which individuals have the time, energy and mental space in their work lives to make changes required to transfer learning to the job.
11	Opportunity To Use	Extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job.
12	Performance Self Efficacy	Trainee's general belief that they are able to change their performance when they want to.
13	Transfer Effort-Performance Expectations	Expectation that effort devoted to transferring learning will lead to changes in job performance.
14	Performance-Outcomes Expectations	Expectation that changes in job performance will lead to valued outcomes.
15	Feedback	Formal and informal indicators from an organisation about an individual's job performance
16	Openness to Change	Extent to which prevailing group norms are perceived by trainees' to resist or discourage the use of skills and knowledge acquired in training.

Source: Holton, EF III, Bates, RA & Ruona WEA 2000, 'The development of a generalised learning transfer system inventory,' *Human Resource Development Quarterly*, vol.11, no.4, pp.344-346.

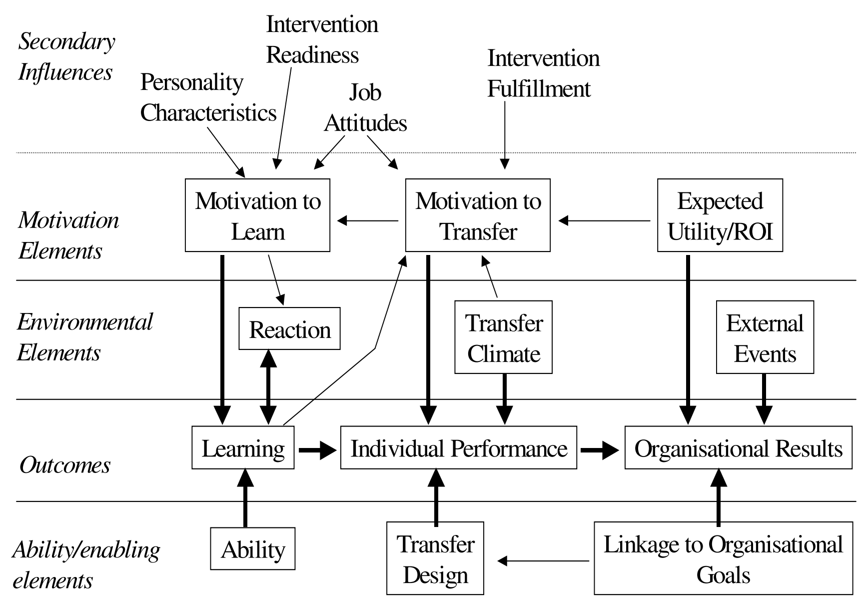
Several studies have successfully used the LTSI model to validate the factors affecting transfer of training (Chen 2003; Donovan et al. 2001; Holton et al. 2003; Yamnill 2001). For example, Chen (2003) found that the LTSI was valid in Taiwan and Yamnill (2001) validated it in Thailand. The LTSI model has also been claimed to be influential in measuring training effectiveness (Donovan et. al. 2001).

Although the LTSI model included motivation to transfer as one of the variables that could affect individual performance, the model only specified two secondary influence variables (*learner readiness* and *performance-self efficacy*) that could influence motivation to transfer. In order to gain an in-depth understanding of the direct and indirect effect on motivation to transfer, this chapter now moves to discuss the Human Resource Development Evaluation Research and Measurement Model (the HRD model) (Holton 1996). This model, according to Holton (1996) should be used for research purposes in investigating *motivation to transfer* training.

2.4 The Human Resource Development (HRD) Evaluation Research and Measurement Model

The HRD model was developed by Holton (1996) and is the first attempt to comprehensively specify the antecedent relationships leading to *motivation to transfer*. As depicted in Figure 2.4, the model shows all hypothesised relationships indicated by thick arrows (primary relationships) or lighter arrows (secondary relationships). Primary intervening variables (*ability*, *motivation to learn*, *reaction to learning*, *transfer design*, *motivation to transfer*, *transfer climate*, *expected utility*, *linkage to organisational objectives and external events*) are shown in boxes with arrows pointing directly to one of the outcomes. Secondary intervening variables (*intervention readiness*, *job attitudes*, *personality characteristics*, and *intervention fulfilment*) are linked by arrows in Figure 2.4 to the primary intervening variables. The primary intervening variables are hypothesised to influence the outcomes (*learning*; *individual performance*; and *organisational results*) that an intervention is targeted to achieve whereas the secondary intervening variables are hypothesised to have a secondary influence on the motivation elements (*motivation to learn*; *motivation to transfer*). Reaction is included in the model and is hypothesised to have a moderating role in the relationship between motivation to learn and learning. Two studies were found using this model investigating factors affecting *motivation to transfer* training (Bates & Holton 1999; Seyler et al. 1998).

Figure 2.4 The HRD Evaluation Research and Measurement Model



Source: Holton, EF III 1996, 'The Flawed Four-Level Evaluation Model', *Human Resource Development Quarterly*, vol.7, no.1, p.17.

This section overviewed the two key training evaluation models used in HRD research: the Kirkpatrck (1994) model and the LTSI model, which evolved during the late 1990s from the early conceptual framework published by Holton in 1996. The main differences between the models were highlighted, particularly in light of emerging research suggesting that motivation to transfer training is now increasingly regarded as an important criteria for transfer of training (Holton 1996; Noe & Schmitt 1986; Seyler et. al. 1998). Finally, the HRD model (Holton 1996) was described as an attempt to comprehensively specify the antecedent relationships leading to motivation to transfer.

The next section moves to a discussion of the motivational elements in Holton's (1996) HRD model in light of the broader HRD research literature. This section is divided into four parts. The first discusses the influences on *motivation to transfer*, the second discusses the influences on motivation to learn, the third addresses the influences on learning outcomes and finally, the influences on individual performance are considered. The influences on motivation to learn, learning outcomes, and individual performance are also discussed because they are important to gain insight on their contribution to *motivation to transfer*. The influences on organisational results such as external events (for example, equipment failures, raw material shortages) and linkage to organisational goals (interventions that are closely linked to organisational goals) are excluded from this discussion because whilst they provide insight into the success or failure of organisational training, they are not related to *motivation to transfer* based on Holton's (1996) model.

2.4.1 Influences on Motivation to Transfer

In Holton's (1996) model, five categories of variables are hypothesised to influence *motivation to transfer*: *job attitudes*, *intervention fulfilment*, *expected utility*, *transfer climate* and *learning outcomes*. They form some of the transfer variables used in this thesis and are detailed below.

Job Attitudes

Job attitudes refer to trainees' attitudes toward the organisation and the job (Holton 1996:11). According to Noe and Schmitt (1986), highly job-involved individuals are more likely to be motivated to learn new skills because participation in training activities can increase skill levels and improve job performance. Several studies have investigated the relationship between job attitudes and *motivation to transfer* but their findings have been mixed (Cheng & Ho 2001; Clark 1990; Kontoghiorghes 2004;

Mathieu, Tannenbaum & Salas 1992). For example, Mathieu et al. (1992) did not find a significant relationship between job involvement and *motivation to transfer* for the reason that trainees who were highly involved in their jobs did not see the training program as instrumental in obtaining valued outcomes. A similar finding was found in Cheng and Ho's (2001) study this time for the reason that trainees pursuing a post-graduate program may represent their desires to enhance their employability rather than their job performance. On the other hand, two studies demonstrated the significant effect of the variables: job involvement on *motivation to transfer* (Clark 1990; Kontoghiorghes 2004). Despite the slightly mixed findings on *job attitudes*, it remains a likely element with an influence on *motivation to transfer* training. In this thesis, job attitudes was not included as a variable under investigation because it is categorised in Holton's (1996) model as a secondary influence variable that affects *motivation to transfer* rather than being a primary influence. According to Holton (1996), it may be sufficient to measure a few secondary influence variables where much of the variance can be explained. In this chapter, those secondary influence variables that were examined in this thesis will be highlighted.

Intervention Fulfilment

Intervention fulfilment refers to the extent to which training meets or fulfills the trainee's expectations and desires (Holton 1996:13). The effect of intervention fulfilment on *motivation to transfer* training has received little attention. Only one study was found to test this notion and the finding has supported the relationship as hypothesised in Holton's (1996) model (Tannenbaum, Mathieu, Salas, & Cannon-Bowers 1991). In Tannenbaum et al.'s (1991) study, the relationship between intervention fulfilment and *motivation to transfer* was significant. Therefore, they suggested that for intervention fulfilment to be a useful concept in understanding trainees' motivation to transfer, future research should assess intervention fulfilment in other training environments. In this thesis, intervention fulfilment was not examined because this variable is categorised as secondary rather than primary influence variable that affects *motivation to transfer*.

Expected Utility

According to Holton (1996:13), training programs that have *expected utility* or exhibit a payoff to both the organisation and to trainees should result in greater *motivation to transfer* learning to the job. This notion is consistent with Vroom's (1964) expectancy theory that individuals will be more motivated when they believe their effort invested in the training program will result in mastery of the training content (*effort-performance expectation*) and when they believe that good performance in the training program will lead to desirable outcomes (*performance-outcome expectation*).

Two studies examined the relationship between expected utility and *motivation to transfer* (Bates & Holton 1999; Clark, Dobbins & Ladd 1993). Bates and Holton (1999) studied the role of expectancies in the *motivation to transfer* in a social service agency. In this study, *motivation to transfer* was conceptualised firstly as a function of *utility* (or expectancy beliefs) about the extent to which learning is expected to have useful job application; and secondly, of rewards or the extent to which the application of learning on the job is perceived to result in some valued outcome for the individual. Findings from this study suggested that utility was a significant predictor of *motivation to transfer* while rewards were not. This finding has some resonance with training in the Malaysian public sector (indeed, likely all public sector organisations) where extrinsic rewards are often not available to motivate employees (Hameed & Analoui 1999) and where employees have been found to respond to more intrinsic rewards (Poon & Idris 1985). For example, in Hameed and Analoui's (1999) study, the researchers found that the lack of intrinsic rewards in the form of recognition by employers inhibited trainees from putting into practice what they learned in training. In another study, Poon and Idris (1985) investigated employees' perceptions and attitudes towards how their rewards are and should be determined. The researchers found that intrinsic rewards in the forms of interesting, meaningful and challenging work and feedback on performance were found to be highly valued.

Other studies have also demonstrated the value of expectancy theory (Vroom 1964) in explaining motivation to learn and training transfer (Noe & Schmitt 1986; Yamnill

2001; Chen 2003). For example, Noe and Schmitt (1986) found that expectations regarding *effort-performance* and *performance-outcome* linkages were highly correlated with motivation to learn. In this thesis, expected utility was examined as a variable affecting *motivation to transfer* because it is categorised as a primary variable in Holton's (1996) model.

Transfer Climate

Transfer climate is hypothesised in Holton's (1996) model as an important environmental element to influence *motivation to transfer*. According to Holton (1996), trainees who worked in conditions supportive of training transfer are more likely to transfer their learning to the job. Seyler et al. (1998) conceptualised transfer climate to refer to organisational climate that includes *supervisor support*, *supervisor sanctions* and *peer support*. This study demonstrated that *peer support* and *supervisor sanctions* were significant predictors of *motivation to transfer* but *supervisor support* was not for the reason that little unique variance was left to be explained by *supervisor support* after accounting for the influence of other organisational climate variables. Although *supervisor support* was not significant in Seyler et al.'s (1998) study, other studies have demonstrated its positive effect (Clarke 2002; Clark et al. 1993; Kontoghiorghes 2001) and that of *peer support* (Clark et al. 1993; Ruona, Leimbach, Holton & Bates 2002) on *motivation to transfer*.

Transfer climate was also conceptualised to consist of situations and consequences that either inhibit or help to facilitate the transfer of learning into a job situation (Rouiller & Goldstein 1993). These authors suggested four types of 'situational' cues: goal cues, social cues, task cues and self-control cues operate in the transfer process. These situational cues remind trainees of what they have learned, or at least provide an opportunity for them to use what they have learned. In contrast, 'consequence' cues were described as on-the-job outcomes, which affect the extent to which training is transferred. The four 'consequence' cues comprise positive *feedback*, negative feedback, punishment, and no feedback. Unfortunately, their study could not validate the suggested constructs because the sample size was inadequate. Later, Holton et al.

(1997) continued the effort to validate the transfer climate variables suggested by Rouiller and Goldstein (1993). Results of the later study suggested that trainees perceive the transfer climate according to referents to the organisation (for example supervisor, peer/task, or self) rather than according to psychological cues (for example goal cues, social cues), as proposed by Rouiller and Goldstein (1993). Besides *peer support*, *supervisor support* and *supervisor sanctions*, the study identified other transfer climate constructs including *openness to change* (prevailing group norms are perceived to discourage use of new skills); *personal outcomes-positive* (application of training on the job leads to positive outcomes); *personal outcomes-negative* (application of training on the job leads to negative outcomes); and *opportunity to use learning* (trainees are provided with resources and tasks that enable them to use their new skills on the job).

Another study by the Holton team attempted to validate transfer climate constructs in an effort to develop a diagnostic tool to measure factors affecting transfer of training (Holton et al. 2000). In this study, *feedback* (formal and informal indicators from an organisation about an individual's job performance) emerged as yet another dimension of transfer climate. A range of studies have confirmed the effect of *feedback* on training transfer (Clarke 2002; Tracey, Tannenbaum & Kavanagh 1995) and employees' performance (Reber & Wallin 1984). For example, Clarke (2002) found, in a study of training in the Social Services Department, UK, that an absence of *feedback* to the trainee on his or her performance impedes the transfer of training. The study confirmed earlier research by Reber and Wallin (1984) who predicted that the performance of employees will be enhanced if they received *feedback* about their own goads when related to their department's performance.

Research examining *personal outcomes-positive* on training outcomes was found in two studies (Bates & Holton 1999; Tracey et al. 1995). For example, in Tracey et al.'s study (1995) found that extrinsic *personal outcomes* (for example, pay and promotion) and intrinsic *personal outcomes* (for example, praise and recognition) have a direct impact on post training behaviours. In particular, extrinsic rewards exhibited very weak associations with training retention whereas intrinsic rewards proved to be more important variable positively impacting on training retention.

Two other studies examined *personal outcomes-negative* (Kontoghiorghes 2001; Tracey et al. 1995). Tracey et al. (1995) found that *personal outcomes-negative* such as punishment was a significant predictor of post training behaviour, particularly in inhibiting training retention. A contrary finding was found in Kontoghiorghes's (2001) study when punishment for failing to use the new skills exhibited only weak associations with training retention. Despite the contradictory finding in Kontoghiorghes's (2001) study, this thesis examines *transfer climate* as a variable affecting *motivation to transfer* because it is categorised as a primary variable in Holton's (1996) model and this has been confirmed in other studies showing the significant influence of *transfer climate* on training transfer and *motivation to transfer*.

Learning Outcomes

Several studies have examined the relationship between learning outcomes and motivation to transfer (Huczynski & Lewis 1980; Seyler et al. 1998; Tannenbaum et al. 1991). In Tannenbaum et al.'s (1991) study, learning was assessed using test performance following training. The authors hypothesised that test performance was related to *motivation to transfer*. Indeed, they found that test performance was positively related to *motivation to transfer*. In a similar study, Huczynski and Lewis (1980) also reported that motivation to transfer was influenced by the learning gained. An interesting, contrary finding to these two studies was that reported by Seyler et al. (1998) who found that learning was not a significant predictor of motivation to transfer. The authors reasoned that the lack of findings related to learning may be a function of the way learning was measured. In their particular study, learning was measured by averaging test scores recorded by a computer on tests taken by the trainees at the end of each lesson. The authors reported that they were not given the opportunity to audit the tests and therefore, there was no assurance that the tests were representative measures of learning that took place during training.

In Holton's model, learning was categorised as a primary variable affecting motivation to transfer. However, in this thesis, learning was not examined because the researcher did not have the opportunity to meet with the trainers to discuss how learning was measured.

2.4.2 Influences on Motivation to Learn

The previous section detailed the five variables in Holton's (1996) HRD Evaluation Research and Measurement Model which influence *motivation to transfer*. This section now turns to the influences on a trainee's motivation to learn, which in turn, has been linked with increased transfer of training. Motivation to learn can be defined as the specific desire of a learner to learn the content of a training program (Noe 1986; Noe & Schmitt 1986). In Holton's (1996) model, motivation to learn is hypothesised to be influenced by *personality characteristics*, *intervention readiness*, and *job attitudes*. These elements are the source of variables used in this study and will now be discussed.

Personality Characteristics

Baldwin and Ford (1988), in their model of the transfer process, suggested *self-efficacy* as one of the trainee's characteristics that can affect training transfer. *Self-efficacy* is a key element in Bandura's Social Learning Theory refering to the belief in one's own capability to perform a specific task (Bandura 1977). The concept of *self-efficacy* can be understood from three dimensions: magnitude or level, strength and generality. Magnitude or level applies to the level of task difficulty. In other words, people may differ in their self belief of being capable of performing tasks of varying difficulty. Strength, the second dimension of *self-efficacy*, refers to whether the conviction regarding magnitude is strong or weak. This means that individuals may differ in their confidence in attaining a given level of performance. Finally, generality indicates the degree to which the expectation is generalised across situations (Bandura 1977:194).

Psychologists have contributed greatly in the field of human HRD, especially in understanding of how *self-efficacy* affects the application of knowledge, skills and behaviour learned in training on the job. This is evidenced by researchers who have found that *self-efficacy* has been shown to be related to *motivation to learn* (Colquitt, LePine & Noe 2000; Quinones 1995) and *training outcomes*: training and task performances (Gist 1989; Gist et al. 1989; Gist et al. 1991; Tannenbaum et al. 1991). For example, in Gist's (1989) study, *self-efficacy* was found to be positively related to training performance on an innovative problem solving task. Another study by Gist et al. (1989) also found *self-efficacy* played an important role in computer software training when trainees with high levels of *self-efficacy* performed better than trainees with lower levels. This finding was consistent with a later study by Gist et al. (1991) that examined the effects of *self-efficacy* in a two-stage training process on the acquisition and maintenance (retention) of complex interpersonal skills (negotiation skills, in this instance). The authors found that trainees with high *self-efficacy* negotiated significantly higher salaries than trainees with moderate or low *self-efficacy*. These studies have demonstrated that the effectiveness of training was dependent on the strength of trainees' *self-efficacy*. Whilst many studies had attempted to examine the effect of *self efficacy* on training transfer, no study has been located to examine the effect of *self efficacy* on *motivation to transfer*. For this reason, in this thesis, *self-efficacy* was examined as a secondary influence variable affecting *motivation to transfer* because it is likely that trainees with high *self-efficacy* are motivated to transfer training as well.

Intervention Readiness

Intervention readiness is hypothesised in the model to influence motivation to learn. According to Holton (1996) *intervention readiness* includes such variables as the degree to which trainees are involved in assessing training needs; involved in planning the training; the degree to which their expectations are clarified; the degree of choice; and other unexplored influences. Research examining trainees' readiness to participate in training was found in four studies (Baldwin et al. 1991; Hicks & Klimoski 1987; Ryman & Biersner 1975; Tannenbaum et al. 1991). In Hicks and

Klimoski's (1987) study, *intervention readiness* was conceptualised as referring to prior information that trainees receive about their training program and the amount of freedom they have to take the program. The authors found that trainees who received a realistic training preview (containing some positive, neutral and unfavourable statements) and those who had a high degree of choice were more likely to believe the training program was appropriate for them to take and were better able to benefit from the training. These trainees also showed more commitment to their decision to attend training than others who received the traditional announcement (containing brief overly positive statements) and those who had a low degree of choice. In a similar study, Baldwin et al. (1991) examined the degree of choice of training content rather than simply the choice to attend training in general as was done in Hicks and Klimoski's (1987) study. Baldwin et al. (1991) found that trainees who received their choice had a higher level of motivation to learn prior to entering the training session than those who were not provided the choice. In this thesis, *intervention readiness* was examined as a secondary influence variable affecting motivation to transfer because it is likely that trainees who are ready to participate in training are motivated to transfer training as well.

Job Attitudes

As described earlier, job attitudes are said influence motivation to transfer. In addition, job attitudes are also hypothesised to influence motivation to learn as well. Four studies have examined the relationship between job attitudes and motivation to learn but findings are mixed (Cheng & Ho 2001; Facteau, Dobbins, Russell, Ladd & Kudisch 1995; Mathieu et al. 1992; Noe & Schmitt 1986). For example, Noe and Schmitt (1986) found that job involvement was strongly related to the acquisition of the key behaviours emphasised in the training program while in Cheng and Ho's (2001) study, job involvement was not significantly related to learning motivation and learning transfer for the reason that the trainees tested (who were pursuing an MBA degree) may have represented their desires to enhance their employability rather than job performance. In this thesis, job attitudes was not examined as a variable affecting motivation to transfer and the justification for this has been described previously in section 2.4.1.

2.4.3 Influences on Learning Outcomes

In the third part of this discussion on elements affecting motivation, this chapter turns to the influences on learning outcomes. Specifically, learning outcomes are hypothesised in Holton's (1996) model as being influenced by *ability*, *reaction to training* and *motivation to learn*. These variables will now be discussed.

Ability

Ability refers to the general capacities related to performance of a set of tasks (Fleishman 1972). Psychologists have demonstrated that general cognitive ability has been shown to have substantial positive relationship with job performance (Ford et al. 1992; Kanfer & Ackerman 1989; Robertson & Downs 1979). For example, Robertson and Downs (1979) in their review of trainability studies (the degree to which trainees are able to learn and apply the material emphasised in the training program) have suggested that approximately 16 percent of the variance in trainee performance may be attributable to ability. Research on *ability* was also done to see how it interacts with motivation to enhance outcomes. For example, Kanfer and Ackerman (1989) found that individual differences in cognitive abilities clearly exerted an effect on performance. In another study, Ford et al. (1992) found that those trainees with high *abilities* obtained a higher number of the trained tasks when performed on the job. In this thesis, *ability* was examined as a variable affecting *motivation to transfer* because it is likely that trainees with high *ability* are more motivated to transfer training to the job.

Trainee Reactions

As described in section 2.3.1 above, Kirkpatrick's (1994) four level training evaluation model (reaction→learning→behaviour change→outcome) defined reaction as trainees' 'liking of' and 'feelings for' a training program. In his model, he viewed reaction as an outcome that could lead to learning. However, he also stressed that a favourable reaction to a training program does not assure learning. Several studies examined the relationship between reaction and learning and the findings showed no support for this relationship. For example, a meta analytic review of the literature based on Kirkpatrick's model conducted by Alliger and Janak (1989) found that only eight studies reported the correlation between reaction and learning and the correlation reported was weak. Therefore, they concluded that reactions had no significant relationship with learning. Similarly, Noe and Schmitt (1986) also found no support for a direct link between reaction and learning while in Dixon's (1990) study, reaction was found to have a little correlation with learning.

In Holton's (1996) model, reaction was not viewed as an outcome but as having a moderating role between motivation to learn and learning. Two studies were located to test this notion but the findings were mixed. Support for the hypothesised relationship was found in Mathieu et al.'s (1992) study. In their study, reaction was found as having a moderating role between motivation to learn and learning as well as acting as a mediator of other relationships. However, a contrary finding was found in Seyler et al.'s (1998) study but the authors gave reason that it was due to learning measurement problems. The authors explained that although the learning measure was based on tests created by subject matter experts, there was no assurance that the tests were comprehensive or representative measures of the learning took place during the training.

In this thesis, reaction was not examined because it has no direct effect on *motivation to transfer* (Holton 1996). Further, as described earlier, several other studies have shown the non significant effect of reaction on learning (Alliger & Janak 1989; Noe & Schmitt 1986).

Motivation to Learn

Motivation to learn can be defined as the specific desire of a learner to learn the content of a training program (Noe 1986; Noe & Schmitt 1986). Motivation to learn is hypothesised in Holton's (1996) model to positively influence learning outcomes. Two studies examined this relationship but the findings were mixed. For example, Quinones (1995) found that whilst motivation to learn had a positive relationship with learning and behaviour it was not related to task performance. Contrary to the findings of Quinones (1995), Noe & Schmitt (1986) in their model of motivational influences on training effectiveness, found no significant relationship between motivation to learn and learning. In this thesis, motivation to learn was not examined because despite being linked to learning outcomes in Holton's (1996) study it demonstrated no direct effect on motivation to transfer in the Holton model.

2.4.4 Influences on Individual Performance

The final set of variables linked to motivation to transfer is that of individual performance. Individual performance is hypothesised in Holton's (1996) model to be influenced by *motivation to transfer*, learning, *transfer design* and *transfer climate*. Research examining the relationship between *motivation to transfer* and individual performance has been largely neglected but an argument can be sustained for their inclusion in this thesis on the basis that indirect evidence has linked them to *motivation to transfer*. For instance, learning has been shown to be correlated with *motivation to transfer* (Huczynski & Lewis 1980; Tannenbaum et al. 1991) and behaviour change (Alliger et al. 1997). Therefore, one can argue that an individual's performance is more likely to occur in highly motivated and successful learners. Further, research has also demonstrated that *transfer design* (Bates, Holton, Seyler & Carvalho 2000; Yamnill 2000) and *transfer climate* (Ford et al. 1992; Seyler et al. 1998) were significant predictors of *motivation to transfer*, which in turn, affect individual performance.

The previous section considered in detail, the motivational elements in Holton's (1996) HRD Evaluation Research and Measurement Model along with a range of studies which also tested these variables. First, the influences on motivation to transfer were considered and detailed, particularly with relevance to the set of variables used for this thesis. Second, the discussion moved to the influences on motivation to learn. A number of variables: personality characteristics, intervention readiness, and job attitudes were detailed and a rationale was provided for the inclusion of the first two as variables used in this thesis. Third, the influences on learning outcomes were considered. Of the variables discussed: ability, reaction to training and motivation to learn the thesis utilised ability as one variable to be tested. Finally, the influences on individual performance were briefly explored with a view to including it as a variable in this thesis. These influences together provide an important insight into motivation to transfer and they form part of the conceptual framework for this thesis which is described in full in Chapter 3.

The next section draws together a discussion on *sharing behaviour* as another element which affects *motivation to transfer* training on the job. Whilst this thesis has found Holton's (1996) model to be both relevant and useful in terms of its insight into the factors that influence *motivation to transfer*, it is argued that the Holton (1996) model ignored the role that *sharing behaviour* plays as an indicator of *motivation to transfer* training. Such a role can certainly be implied from the findings of research in the area. Several transfer researchers have suggested the importance of knowledge sharing in understanding transfer of training (Noe & Ford 1992; Roscow & Zager 1988; Tracey et al. 1995). However, knowledge sharing behaviour has not been fully explored in the transfer literature. Only one study was located which examined this variable and it was found that knowledge *sharing behaviour* did have an impact on post-training behaviour by influencing *self-efficacy* and *motivation* (Tracey et al. 1995). Given that this provides prima facie evidence that *knowledge sharing behaviour* acts to promote *motivation to transfer*, the inclusion of this variable in the thesis forms a key hypothesis (this is discussed further in Chapter 3). The argument for including *knowledge sharing behaviour* as a factor impacting on *motivation to transfer* training in the Malaysian public sector is discussed below.

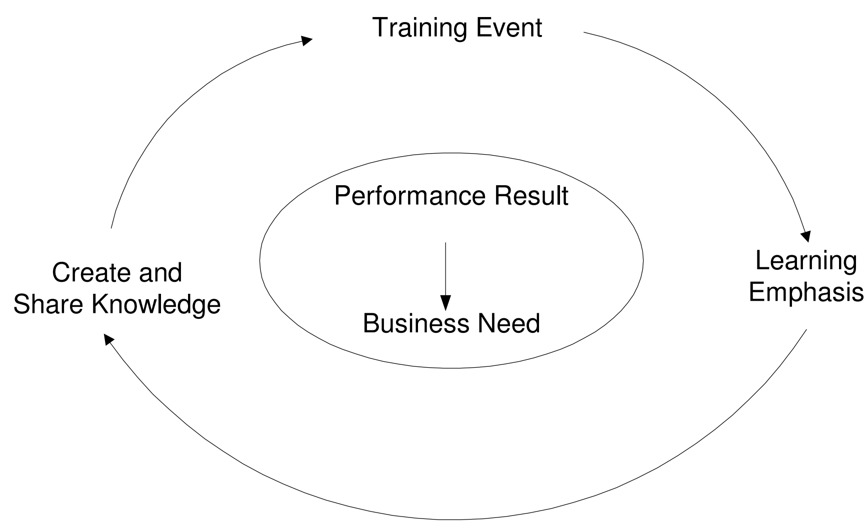
2.5 Knowledge Sharing and Its Benefits

Connelly and Kelloway (2003:294) defined *knowledge sharing* as a set of behaviours that involves the exchange of information or assistance to others. One proposed definition consists of donating and collecting knowledge, where knowledge donating refers to communicating to others what one's personal intellectual capital is, and knowledge collecting refers to consulting colleagues in order to get them to share their intellectual capital (Van Den Hoof & Ridder 2004:118).

It has been recognised that knowledge is valuable to organisations, particularly when it is shared (Noe et. al. 2004). As more organisations move towards achieving the status of a 'learning organisation', the sharing of knowledge among employees becomes crucial because it is the key and indeed, defining element in a learning organisation (Gephatt, Marsick, Van Buren & Spiro 1996). A learning organisation is a company that has an enhanced capacity to learn, adapt and change (Gephatt et al.1996). In a learning organisation, the people are the essential ingredients and therefore, in order to become a learning organisation, the people must be committed to learning and willing to share what they have learned (Noe et. al. 2004).

There has been a growing interest in the impact of knowledge sharing in a training and development context as a mechanism to meet business challenges and provide competitive advantage (Noe 2005; Noe et. al. 2004). According to Noe (2005:433), employees are expected to acquire new skills and knowledge in training, apply them on the job and share this information with fellow workers. This has led the changing role of training from a focus on programs to a broader focus on learning and creating and sharing knowledge (Martocchio & Baldwin 1997; Noe 2005; Noe et. al. 2004). The changing of training's role according to Noe (2005) is depicted in Figure 2.5 below.

Figure 2.5 Evolution of Training's Role



Source: Noe, RA 2005, *Employee Training and Development*, p.41.

Figure 2.5 demonstrates that to some extent, training will continue to focus on developing programs to teach specific skills. However, Noe (2005) argued, to improve employees' performance and help meet business needs and challenges means that the role of training must necessarily evolve to emphasise learning, creating and sharing knowledge.

The importance of knowledge *sharing behaviour* in understanding transfer of training has been acknowledged by several researchers through the concept of continuous learning (Noe & Ford 1992; Rosow & Zager 1988; Tracey, Tannenbaum & Kavanagh 1995). However, only one study appears to have empirically examined the relationship between continuous learning and post-training behaviour (Tracey et. al. 1995). In Tracey et al.'s (1995) study, continuous learning was conceptualised as the acquisition, application and sharing of knowledge, behaviours and skills not only from training but also from a variety of other sources. The findings of that study indicated that continuous learning (often conceptualised as *knowledge sharing*) has a positive effect on post-training behaviour. In other words, the more trainees share their knowledge, the greater the transfer of training. Tracey et al. (1995) called for future research to examine how *knowledge sharing* may affect post-training behaviour by influencing *self-efficacy*, *motivation* and *trainees expectations* about training experiences (Tracey et al. 1995). Clearly, it follows then, that if sharing behaviour does have a direct effect on *self-efficacy* and *motivation*, then trainees in a less supportive transfer climate will probably be less likely to transfer training to the job.

Although sharing behaviour has not been fully explored in the training transfer literature, the benefits of *knowledge sharing* have been documented in other settings. For example, *knowledge sharing* has been found to: promote better learning by individuals (Collison & Cook 2004), provide an important mechanism to achieve better decision making (Tschannen-Moran 2001); and could lead to project effectiveness (Eisenhardt & Tabrizi 1995; Henderson & Cockburn 1994; Leanord-Barton & Sinha 1993). Further, the benefits of *knowledge sharing* have been reported in studies of firms such as Buckman Laboratories and Texas Instruments, which claimed significant gains in revenue (Chua 2003) while Dow Chemicals and Chevron reported savings (Stewart 2001).

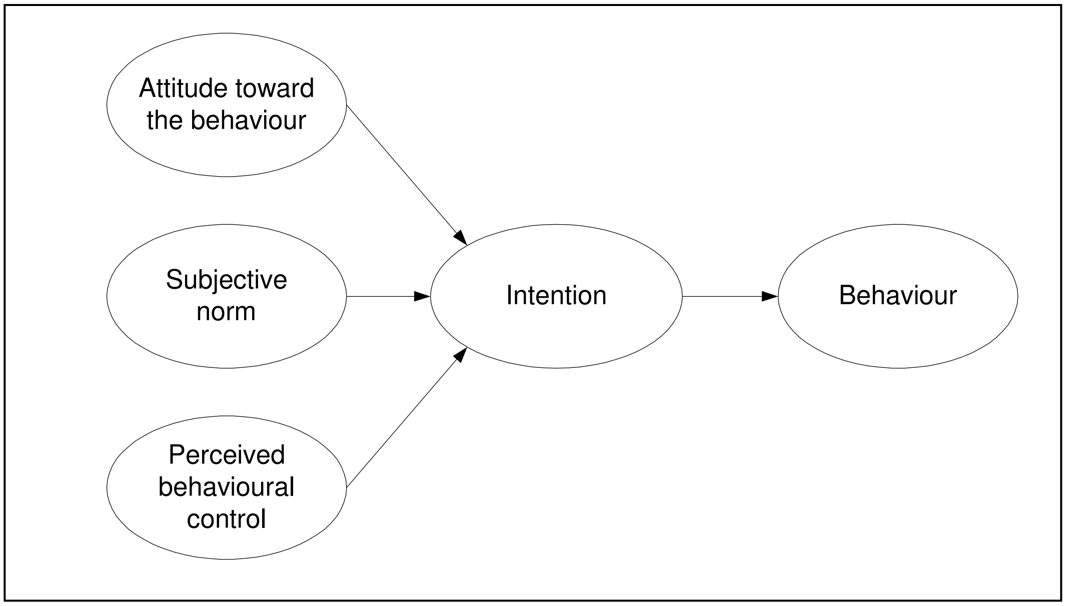
One important point raised by researchers and practitioners in this field is that the success of *knowledge sharing* strategies in organisations is dependent on the extent to which individuals are willing to share their knowledge (Connelly & Kelloway 2003; Lin & Lee 2004; Sveiby & Simons 2002; Van Den Hoof & De Ridder 2004). Without the willingness to share, the benefits of *knowledge sharing* described earlier are less achievable. Therefore, it may be illuminating to examine the attitude towards knowledge sharing behaviour in order to gain a greater understanding of why individuals decide to engage or not to engage in *knowledge sharing*. This issue is taken up in the following section which details the Theory of Planned Behaviour (Ajzen 1991), a theory which has its roots in the field of social psychology and which has been widely used to predict and explain the phenomena of behavioural intention and actual behaviour.

2.6 The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) originated in the field of social psychology as a predictor for human behaviour (Ajzen 1991; Ajzen & Fishbein 1980; Fishbein & Ajzen 1975). The TPB predicts that the most important determinant of a person's behaviour is behaviour *intent*. The individual's intention to perform a behaviour is a combination of his or her attitude toward performing the behaviour, the prevailing subjective norms and the perceived behavioural controls on the individual (Ajzen 1991).

Figure 2.6 outlines the TPB model, which illustrates that one's intentions give rise to one's behaviour. Acting on this relationship between intention and behaviour are: one's *attitude* towards the behaviour; the *subjective norms* surrounding the behaviour; and one's *perceived behavioural controls*. Based on TPB, peoples' *attitudes* towards their own behaviours refer to the degree to which they have made favourable or unfavourable evaluations of the behaviour in question. *Subjective norms* are the perceived social pressures from significant others to perform or not to perform the behaviour and *perceived behavioural controls* refer to the perceived ease or difficulty of performing the behaviour (Ajzen 1991:188). In combination, one's *attitude* toward the behaviour, *subjective norms* and *perceived behavioural controls* lead to the formation of a behavioural intention. According to Ajzen (1991), the more favourable the *attitude* and *subjective norm* with respect to the behaviour, and the greater the *perceived behavioural control*, the stronger should be an individual's intention to perform the behaviour under consideration.

Figure 2.6 The Theory of Planned Behaviour



Source: Ajzen, I 1991, 'The theory of planned behaviour,' *Organisational Behaviour and Human Decision Processes*, vol.50, p.182.

A review of 185 independent studies that used TPB to predict human behaviour by Armitage and Conner (2001) found that, the TPB accounted for 27 to 39 percent of the variance in behaviour and intention respectively, providing support for the efficacy of the TPB as a predictor of intention and behaviour. In the international literature, the TPB has been widely used in empirical research to predict human behaviours in different settings. For example, the theory has been used to better understand consumers' intentions to attend a sport event (i.e., hockey) (Cunningham & Kwon 2003). In their study *attitude*, *subjective norm*s and *perceived behavioural controls* were positively associated with intentions to attend a sport event. Other studies variously utilised TPB to predict individual's intentions to use a search engine as a learning tool (Liaw 2004); to predict drivers' compliance with speed limits (Elliot, Armitage & Baughan 2003); to predict hunting behaviours (Hrubes & Ajzen 2001); to predict dishonest actions (Beck & Ajzen 1991); and to predict teachers' intentions to provide dietary counselling (Astrom & Mwangsi 2000). Further, the

TPB has also been applied in a workplace context to assess the extent to which senior managers intended to encourage *knowledge sharing* (Lin & Lee 2004). Together, these studies point to the efficacy of the TPB in understanding human behaviour through people's intentions. In terms of the present thesis, the TPB has the potential to provide an insight into an individual's intention to share the knowledge and skills learned in training with others in the workplace.

2.7 Summary

This chapter described the concept of training, transfer of training and motivation to transfer training through an international search of the research literature. While training was defined as a planned learning experience designed to bring about permanent change in an individual's knowledge, attitudes, or skills, transfer of training was described as the degree to which trainees apply the knowledge, skills and attitudes to their job. A trainee's *motivation to transfer*, on the other hand, was described as a trainee's desire to use the training on the job. Although, over time, researchers have expressed different views about transfer of training by proposing variously: concepts of positive, negative and zero transfer; general and specific transfer; and far and near transfer, it was argued in this chapter, that there was general agreement that transfer of training will occur only when trainees have the desire (motivation) to use the knowledge and skills learned in training on the job.

The two dominant evaluation models found in the literature were discussed in order to paint a picture of the factors which may influence a trainee's *motivation to transfer* training: the Kirkpatrick (1994) evaluation model and the LTSI (Holton et. al. 2000). The Kirkpatrick (1994) evaluation model provided a starting point in HRD evaluation but ultimately did not provide a strong guide to the whole training process as it focused only on training outcomes (*reaction*, *learning*, *behaviour* and *results*) and did not account for the impact of other variables such as *motivation* and *work environment* on *behaviour change*. The LTSI (Holton et. al. 2000), on the other hand, provided some indication that *motivation to transfer* is influenced by secondary influence variables, that is, *performance-self efficacy* and *learner readiness*.

The chapter then moved to the key model outlining *motivation to transfer* described the Human Resource Development (HRD) Evaluation Research and Measurement Model (Holton 1996). Based on this model, *motivation to transfer* is hypothesised to be influenced by *intervention fulfilment*, *job attitudes*, *learning*, *expected utility* and *transfer climate*. Other variables such as *intervention readiness*, *personality characteristics*, *ability*, *motivation to learn* and *transfer design* were hypothesised to have an indirect influence on *motivation to transfer*. These factors were supported by several studies discussed in the chapter.

Arguably, a key omission in the models presented in this chapter was their failure to include *knowledge sharing* as a potential variable influencing motivation to transfer training. This chapter introduced the concept of *knowledge sharing* and reported its benefits. The chapter indicated that the theory of planned behaviour may be used to provide an insight into an individual's intention to share learned knowledge and skills with others in the workplace, providing a set of variables to test the relationship of *knowledge sharing* with *motivation to transfer training*.

In the next chapter, the development of conceptual framework and the methodology chosen for the present thesis is detailed.

CHAPTER 3
THE CONCEPTUAL FRAMEWORK
AND
METHODOLOGY

3.1 Introduction

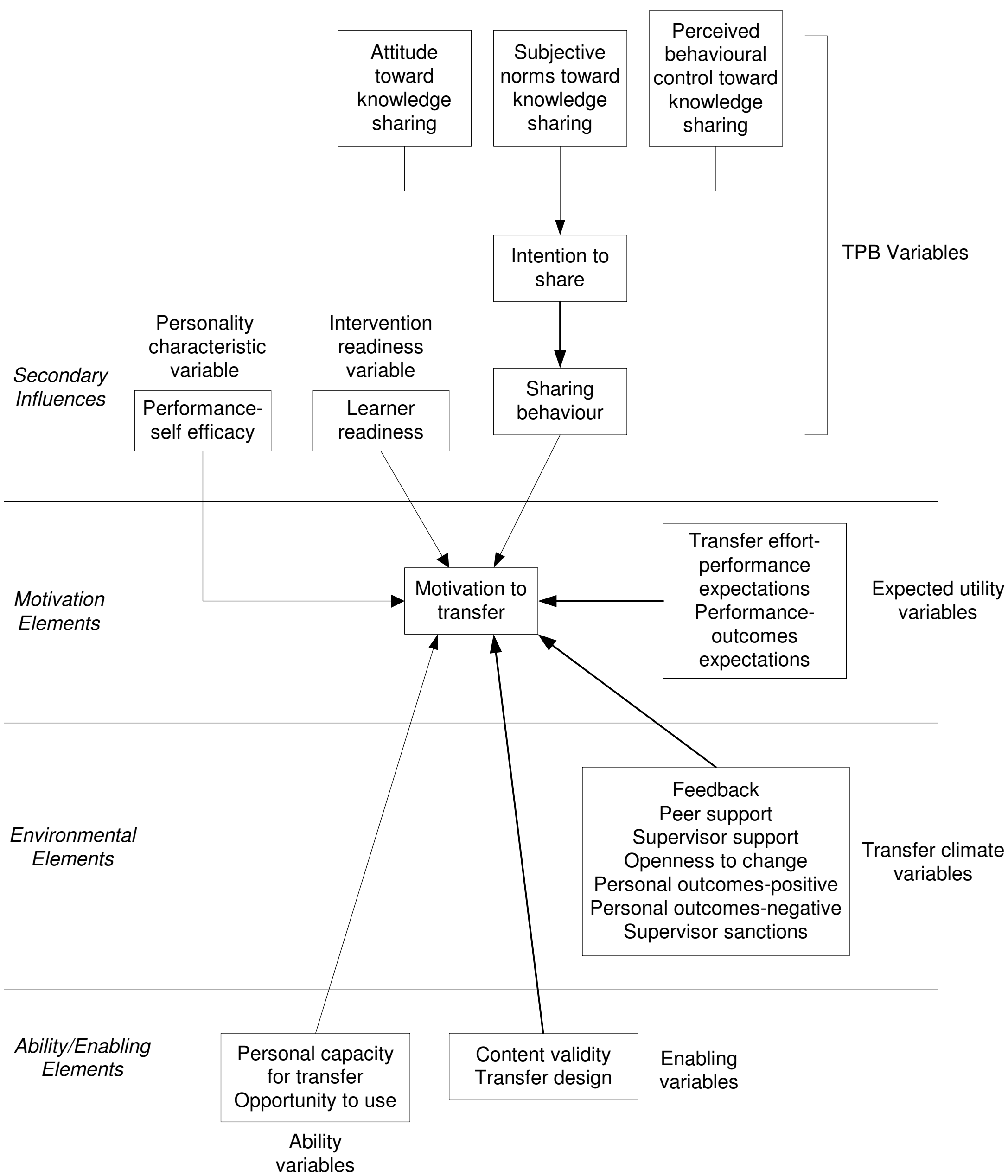
Chapter 2 set out the research context to this study by introducing the international literature pertaining to motivation to transfer training. The definitions of motivation to transfer training were considered before moving to a discussion on the various factors known to influence trainees' motivations to transfer their training. This was done through an examination of the key training evaluation models: the Kirkpatrick (1994) model, the LTSI model (Holton et al. 2000) and the HRD model (Holton 1996). It was also hypothesised in Chapter 2 that knowledge sharing plays a role in facilitating transfer of training and consequently, the TPB theory (Ajzen 1991) was discussed within a framework relating to trainees' intention to share their knowledge and skills with others in the workplace

Chapter 3 now moves to lay out the conceptual framework and methodology used in this thesis to link knowledge sharing with motivation to transfer training. The Chapter describes the hypotheses formulated as the basis of inquiry for the thesis. Finally, the chapter describes the methodology chosen to test the relationships hypothesised.

3.2 The Conceptual Framework

As described above and detailed in Chapter 2, the research framework for this study was constructed from an adaptation of three key HRD models: the LTSI model (Holton et al. 2000); the HRD model (Holton 1996) and the TPB theory (Ajzen 1991). First, the category of variables receiving most attention in the literature on the basis of their ability to influence motivation to transfer training was selected for the framework. These variables explain a major portion of the variance in the concept of motivation to transfer training. Added to this were: two secondary variables (*personality characteristics* and *intervention readiness*); and four primary variables (*expected utility*, *transfer climate*, *ability* and *transfer design*). The variables from the Learning Transfer System Inventory (LTSI) developed by Holton et al. (2000) were also fitted into the research framework. As discussed in Chapter 2 the LTSI model was developed from Holton's earlier 1996 model and as they pertained to motivation to transfer, they fitted well into the conceptual framework. The LTSI variables comprised: secondary variables (*performance-self efficacy* and *learner readiness*); expected utility variables (*transfer effort-performance expectations* and *performance-outcome expectations*); transfer climate variables (*feedback*, *peer support*, *supervisor support*, *openness to change*, *personal outcomes-positive*, *personal outcomes-negative* and *supervisor sanctions*); ability variables (*personal capacity for transfer* and *opportunity to use*); and enabling variables (*content validity* and *transfer design*). The definitions for each of these variables is provided in Chapter 1 (see Table 1.1). Finally, the variables from the theory of planned behaviour (TPB) (Ajzen 1991) were included in the framework. As explained in Chapter 2, the TPB describes the elements pertaining to knowledge sharing which is hypothesised here as being linked to motivation to transfer training. Figure 3.1 depicts the conceptual framework developed for this thesis.

Figure 3.1 The Conceptual Framework



The contribution of this conceptual framework to the understanding of factors influencing motivation to transfer training is fourfold. First, the conceptual framework is unique in its utilisation of the application of TPB to predict trainees' sharing behaviour in the workplace. As explained in Chapter 2, the theory of planned behaviour predicts that a trainee's *intention to share* his or her knowledge and skills in the workplace will be determined by his or her *attitude toward sharing behaviour* together with the operation of *subjective norms* and *perceived behavioural control*. The more favourable the *attitude* and *subjective norms* and the greater the *perceived behavioural control*, the stronger should be trainees' *intention to share* the learned knowledge and skills in the workplace.

Second, the conceptual framework is unique in its hypothesis that the personality characteristic variable: *performance-self efficacy* and the intervention readiness variable: *learner readiness* have a direct influence on *motivation to transfer*. In contrast, Holton's (1996) model hypothesised that the personality characteristic and intervention readiness variables influenced *motivation to learn*. As described in Chapter 2, research has suggested that the personality characteristic variable, self *efficacy* (Gist 1989; Gist et al. 1989; Gist et al. 1991; Tannenbaum et al. 1991) and intervention readiness variable, *learner readiness* (Hicks & Klimoski 1987; Baldwin et al. 1991; Tannenbaum et al. 1991; Ryman & Biersner 1975) are related to two key training outcomes: training and task performance. It is from the work of these researchers that this thesis argues that trainees with high *self-efficacy* and are ready to participate in training are motivated to transfer training.

Third, the conceptual framework is unique in its hypothesis that the ability variables: *personal capacity for transfer* and *opportunity to use* have a direct influence on *motivation to transfer*. In Holton's (1996) model, the ability variables were hypothesised to influence *motivation to transfer* indirectly via their relationship with learning. Nevertheless, the ability variable, *personal capacity for transfer* was described as an important determinant of training transfer (Holton et al. 2000; Holton et al. 2003). The variable, *opportunity to use* was described as a significant predictor of *motivation to transfer* (Seyler et al. 1998) and associated positively with training transfer (Awoniyi et al. 2002; Lim & Johnson 2002; Tracey et al. 1995). Therefore, it is argued in this thesis that trainees with high *personal capacity for transfer* and have the *opportunity to use* their training are more *motivated to transfer* that training in the workplace.

Finally, the conceptual framework hypothesises that the enabling variables, *content validity* and *transfer design* exert a direct influence on *motivation to transfer.* In Holton's (1996) model, *transfer design* was hypothesised to influence individual performance. *Content validity* was found to have a significant correlation with *motivation to transfer* (Seyler et al. 1998) and was a significant predictor of transfer performance (Bates et al. 2000; Axtell, Maitlis & Yearta 1997). Earlier work on *transfer design* had found that using identical elements (for example when training environment was identical to the work environment) (Gagne, Baker & Foster 1950), teaching through general principles (for instance, trainees taught not just applicable skills but also the general rules and theoretical principles that underlie the training content) (Bernstein, Hillix & Marx 1957) and using several examples of a concept to be learned (Shoe & Sechrest 1961) resulted in training transfer. Therefore, given the reported influence of the enabling variables, *content validity* and *transfer design* on *motivation to transfer* and actual transfer of training, it was hypothesised that *content validity* and *transfer design* exert a direct influence of on *motivation to transfer*.

As described in Chapter 2, a number of factors included in the original models used to derive the conceptual framework [the Kirkpatrick (1994) model, the LTSI model (Holton et al. 2000), the HRD model (Holton 1996) and the TPB (Ajzen 1991)] were removed. The resulting conceptual framework removed: *reaction*, *learning*, *external events*, *organisational performance* and *linkage to organisational goals*. The reasons for their removal from the conceptual framework is described in Chapter 2 and summarised in Table 3.1:

Table 3.1 Factors removed from the original HRD models

FACTOR	REASON FOR REMOVAL
Reaction	This variable is not significantly correlated with learning (Noe & Schmitt 1986; Alliger & Janak 1989; Dixon 1990) and is not found to moderate the relationship between motivation to learn and learning (Seyler et al. 1998). Further, reaction was not hypothesised in Holton (1996) model to have an influence on motivation to transfer.
Learning	The researcher did not have the opportunity to examine whether the material used for the performance test during training were representative measures of the learning that took place during training.
external events, *organisational performance* and *linkage to organisational goals*	These factors are not related with motivation to transfer training (Holton 1996).

3.2.1 The Research Questions

Based on the conceptual framework, this thesis attempts to answer the six specific research questions:

Research Question One:

Which of these transfer of training variables:

- *motivation to transfer*;
- secondary influences (*performance-self efficacy, learner readiness*);
- expected utility (*transfer effort-performance expectations, performance-outcomes expectations*);

- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*);
- enabling (*content validity, transfer design*); and
- TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing)* are significantly different in terms of their mean score across different training types (general training, management/leadership training, computer training)?

Research Question Two:

Which of these transfer of training variables:

- *motivation to transfer*;
- secondary influences (*performance-self efficacy, learner readiness*);
- expected utility (*transfer effort-performance expectations, performance-outcomes expectations*);
- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*),
- enabling (*content validity, transfer design*); and
- TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean score across trainees' demographics (gender, age, level of education, work experience, position of employment)?

Research Question Three:

Which of these transfer of training variables:

- secondary influences *(performance-self efficacy, learner readiness*);
- expected utility *(transfer effort-performance expectations, performance-outcomes expectations*);
- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*); and
- enabling (*content validity, transfer design*) serve as key significant predictors of one's motivation to transfer training?

Research Question Four:

Is the variable: *intention to share* significantly correlated with *sharing behaviour* and is *sharing behaviour* significantly correlated *with motivation to transfer*?

Research Question Five:

What are the significant predictors of *intention to share*?

Research Question Six:

What are the direct and indirect relationships (via the significant predictors identified in research question three) between *sharing behaviour* and *motivation to transfer*?

In order to answer the above research questions, this thesis formulated a series of hypotheses (H1 to H10) and they are stated in Table 3.2:

Table 3.2 The Statement of Hypotheses

	Hypothesis (H)
1	H1: These transfer of training variables: *motivation to transfer*; secondary influences (*performance-self efficacy, learner readiness*); expected utility (*transfer effort-performance expectations, performance-outcomes expectations*); transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*); ability (*personal capacity for transfer, opportunity to use*), enabling (*content validity, transfer design*) and TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean score across different training types (general training, management/leadership training, computer training).
2	H2: These transfer of training variables: *motivation to transfer*; secondary influences (*performance-self efficacy, learner readiness*); expected utility (*transfer effort-performance expectations and performance-outcomes expectations*); transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*); ability (*personal capacity for transfer and opportunity to use*), enabling (*content validity and transfer design*) and TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing and perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean score across trainees' demographics (gender, age, level of education, work experience, position of employment).
3	H3: Secondary influences variables (*performance-self efficacy, learner readiness*) will explain a significant proportion of variance in *motivation to transfer*. H4: Expected utility variables (*transfer effort-performance expectations, performance-outcomes expectations*) will explain a significant proportion of variance in *motivation to transfer*. H5: Transfer climate variables (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*) will explain a significant proportion of variance in *motivation to transfer*. H6: Enabling variables (*content validity, transfer design*) will explain a significant proportion of variance in *motivation to transfer*. H7: Ability variables (*personal capacity for transfer, opportunity to use*) will explain a significant proportion of variance in *motivation to transfer*.
4	H8: *Intention to share* will be significantly correlated to sharing behaviour and *sharing behaviour* will be significantly correlated to *motivation to transfer*.
5	H9: *Attitude, subjective norm and perceived behavioural* control toward knowledge sharing will explain a significant proportion of variance in *intention to share*.
6	H10: *Sharing behaviour* will have a direct and indirect relationship (via the significant predictors identified in research question three) with *motivation to transfer*.

This section described the conceptual framework developed for this study. The framework was derived from four key HRD models with respect to their contribution to understanding the concept of one's motivation to transfer training. From the conceptual framework, six research questions and 10 hypotheses were presented as the key areas of inquiry for this study. The next section describes the methodology chosen to test the 10 hypotheses formulated in this thesis in order to answer the six research questions.

3.3 Methodology

This section chronicles the methodology utilised for the thesis commencing with a description of the questionnaire design, the sample chosen and the procedures undertaken for data collection. The chapter then moves to consider how data screening was conducted, how the checking of multivariate assumptions was undertaken and how construct validity and reliability were examined. The final part of this section describes the statistical techniques used for hypothesis testing.

3.3.1 Questionnaire Design

The variables depicted in the conceptual framework were measured using multiple items in the questionnaire. For this reason, the researcher searched the literature to find validated scales for the 21 constructs. However, it was found that only sample of items were reported (normally one item) in the journals and some of the scales were copyrighted (Holton et al. 2000). Thus, the researcher developed the scales to measure the 21 constructs and the leading methodologists in scale development were consulted (Cavana et al. 2001; Churchill 1979; De Vellis 2003; Hinkin 1995; Spector 1992).

The survey instrument was developed in Bahasa Malaysia (Malay Languange) and the English version was included in Appendix A for reporting purposes. It comprised of a 87 Likert item questionnaire designed to measure the constructs under study. The questionnaire utilised a five-point scale that ranged from '1=Strongly Disagree' to

‘5=Strongly Agree’. Questionnaire design followed a framework of nine steps which is described below.

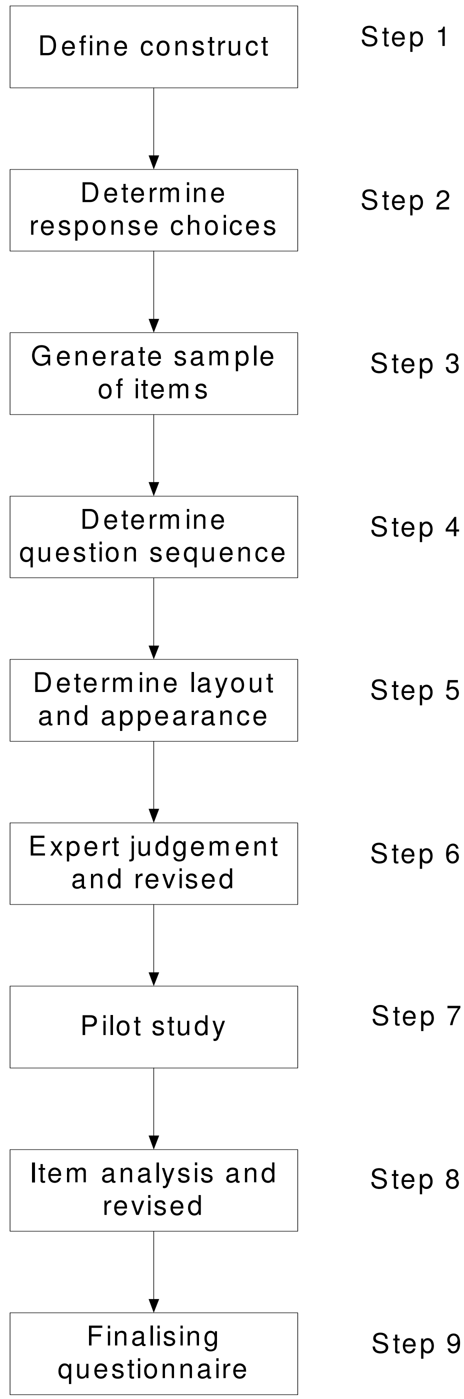
The Framework of Questionnaire Design

The framework used to develop the questionnaire was based on Churchill (1979:66), Spector (1992:8) and Cavana et al. (2001:228). Churchill’s (1979) framework was originally developed for marketing research but it has been applied to other disciplines as well such as for developing a measure of knowledge management behaviours and practices (Darroch 2003); for developing a measure of participative decision making (Parnell & Bell 1994); and for developing a measure of online learning (Fortune, Shifflett & Sibley 2006). Spector’s (1992) framework was developed purposely for summated rating scales (multiple item scales) and therefore, was considered appropriate for this thesis. Finally, Cavana et al.’s (2001) framework was used in this study because it takes into account the principle of wording and the general appearance of the questionnaire. The three frameworks were modified to the needs of this thesis. The modified framework consists of nine steps as depicted in Figure 3.2 and detailed below.

Step 1-Define Construct

The first step in the questionnaire design was to define the constructs of interest (Spector 1992; Churchill 1979). Churchill (1979:67) stressed that researchers must be exacting in delineating what is included in the definition and what is excluded to ensure that what we want to measure is determined clearly. In this thesis, 16 constructs were defined based on the LTSI model (Holton et al. 2000) and another five constructs were based on the TPB model by Ajzen (1991) (see also Chapter 2). For example, one of the constructs based on the LTSI model (Holton et al. 2000) is *learner readiness* which refers to the extent to which trainees are prepared to enter and participate in training. Therefore, the definition provided by Holton et al. (2000) was then used to measure *learner readiness*. Similarly, all other constructs under study were given the definition prescribed in the originating model from which they were drawn.

Figure 3.2 The Framework for Developing Questionnaire



(Source: Churchill 1979; Cavana et al. 2001; Spector 1992)

Step 2-Determine Response Choices

The second step in the process of questionnaire design was to determine the nature of responses available to respondents. The three most common response choices are agreement, evaluation and frequency (Spector 1992:19). Agreement asks respondents to indicate the extent to which they agree with each item. Evaluation asks for a rating for each item based on aptness of response. Frequency asks for a judgement of how often items have occurred, should, or usually occur. Most studies in transfer of training using questionnaires as the instrument in data collection apply a five-point Likert-type scale to indicate the extent to which respondents agree or disagree with each item, as well as measure the magnitude of agreement or disagreement (for example, Holton et al. 2000; Seyler et al. 1998; Yamnill 2000; Chen 2003). Although in some studies, a seven-point (for example, Machin & Fogarty 2004) and a 10-point (for example, Gaudine & Saks 2004) scale has been used, there is a body of research suggesting that reliability increases as the number of points increase to five and then level off as the points increase to five (Lissitz & Green 1975). Therefore, this study utilised a five point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Disagree).

Step 3-Generate Sample of Items

The third step in the framework of questionnaire design was to generate a sample of items for all constructs under study. In order to guide this step, several recommendations made by researchers were taken into consideration as follows:

- The content of each item should primarily reflect the construct of interest (De Vellis 2003:63).
- A large number of items represents a form of insurance against poor internal consistency (De Vellis 2003:66).
- Lengthy items should be avoided as length usually increases complexity and diminishes clarity (De Vellis 2003:67; Cavana et al. 2001:232).
- A measure should have at least three relatively homogeneous items for content adequacy (Cook, Hepworth, Wall & Warr 1989:4).

- Items that convey two or more ideas (doubled-barrelled) should be avoided (De Vellis 2003:68; Churchill 1979:68; Spector 1992:23)
- Negatively worded items should be used to avoid agreement bias (De Vellis 2003:69; Churchill 1979:68; Spector 1992:24).
- Double negative worded items are a source of ambiguity (Baker 2003:352).
- Information that respondents cannot or will not provide should not be asked for (Schwab 2005:43).
- It should be made simple (Schwab 2005:43).
- It should be specific (Schwab 2005:43).
- It should use plain language (Spector 1992:25).
- It should use everyday language, simpler words and simple sentences (Baker 2003:351).
- It should consider the reading level of respondents (Spector 1992:25).
- It should consider the inclusion of validation items (De Vellis 2003:87).

In addition to the recommendations above, the researcher conducted a focus group interview with four subjects (officers at the Ministry of Finance), who had recently experienced a training course. Using focus group interviews during the item generation stage was suggested by Churchill (1979) and employed by other transfer of training researchers (for example, Enos, Kehrhahn & Bell 2003; Hayes & Pulparampil 2001). Specifically, the objective of the focus group interview was to find out what trainees understood by each of the 21 concepts under study. The interview was tape-recorded with their permission and transcribed. The themes emerging from the transcribed interview were then used for generating items (Appendix B lists the items generated for each construct). During the item generation process, the researcher did not conduct any sorting procedures involving subject matter experts. The involvement of HRD experts were in Step 6 where they were invited to examine each item and make a judgement on whether each item does measure the theoretical construct nominated (see Step 6, pg.67).

Step 4-Determine Question Sequence

The fourth step in the questionnaire design was to determine the item sequence. In order to guide this step, the researcher adopted several recommendations made in other studies:

- Use a funnel approach. This means, each item in the questionnaire should be determined from the general to the specific and from items that are relatively easy to answer to those that are progressively more difficult (Cavana et al. 2001:232).
- Negatively and positively worded items should be placed in different parts of the questionnaire, as far apart as possible (Cavana et al. 2001:232).
- Place the items randomly to reduce any systematic biases in the response (Cavana et al. 2001:232).
- Relegate sensitive items to the body of the questionnaire and intermix among some not-so-sensitive ones (Churchill 1979:205).

Step 5-Determine Layout and Appearance

The layout and general appearance of the questionnaire are important to ensure that the questionnaire looks attractive (Cavana et al. 2001:234). In this step, the researcher prepared the covering page containing information about the researcher such as the name, thesis title, the objectives of the study and inviting respondents to participate. Other information such as the total number of questions to be answered, the time needed to complete the questionnaire, contact information and most importantly, the statements about the confidentiality and anonymous of the information provided were also stated (see Appendix A). Other criteria such as the selection of font size (12, Times New Roman) and line spacing (1.5) were also taken so that the questionnaire appeared neat and attractive to enhance questionnaire completion by the target group.

Step 6-Expert Judgement and Revised

Upon the completion of Step Five, the questionnaire was examined for content validity. According to Cavana et al. (2001:238), assessing content validity can be done by a group of experts who examine each item and make a judgement on whether each item does measure the theoretical construct nominated. For this purpose, the questionnaire was sent to two academics in the area: one from Universiti Teknologi MARA, Malaysia and the other, from the National University of Malaysia. The first, an Associate Professor specialised in Human Resource Management while the second specialised in Organisational Behaviour. The researcher considered their specialisations as closely related to the field of Human Resource Development and therefore, they were suitable to be the panel judges. They were invited to give their comments not only about the validity of the items but also the general appearance of the questionnaire as well. The comments made by the two panel judges and the type of action taken were shown in Table 3.3 below.

Table 3.3 Experts Comments

Comment	Action Taken
Expert 1 and 2: The respondent's name, email and contact number should not be included in the demographic information, as these will cause bias.	The researcher gained confirmation by the course co-ordinator at the training centre that this information could be obtained from the registration database. Therefore, action was taken to delete them from the questionnaire.
Expert 1: There were two items in the questionnaire that could not be answered by respondents at the conclusion of a training program.	These two items were made in future tense.
Expert 1 and 2: The length of the questionnaire (117 items).	The researcher maintained the length of the questionnaire until the questionnaire was piloted in order to gain the feedback from the respondents.

Step 7-Pilot Study

According to Churchill (1979:206), data collection should never begin without an adequate pre-test of the instrument. For this reason, the questionnaire was pilot tested with 28 trainees attending a two-day workshop on Public Accounts at the training division, Accountant General's Department of Malaysia. In the pilot test, two main factors suggested by Spector (1992:8) were examined: respondent identification of ambiguous and confusing items; and items which could not be rated using the dimension chosen. Other than that, the researcher also examined the time taken by the respondents to complete all the 177 items.

The department granted the permission to conduct the pilot test (see Appendix C) and respondents were informed that the study was voluntary and anyone who wished to leave was allowed to do so. All agreed to participate. The questionnaire was administered at the conclusion of the training program and collected immediately upon completion. During the pilot test, as indicated above, the respondents were concerned about the length of the questionnaire (117 items). They had been told that all items were in short sentences and should not take a long time to complete. They were also given the chance to ask any questions for clarity if they found this necessary. All the respondents said that the questionnaire was understandable and they took between 30 to 40 minutes to complete the questionnaire. The data obtained from the pilot study was then used to examine the internal consistency of the items for each construct. This is described in the next step.

Step 8-Item Analysis

In this step, item analysis was conducted to find those items that formed an internally consistent scale and to eliminate those items that did not (Spector 1992:29). For this reason, the researcher adopted several recommendations made by experts while conducting this step as follows:

- The item-to-total correlations exceed 0.50 and the inter-item correlations exceed 0.30 (Hair et al. 1998:118).
- Reliability coefficient alpha for a new scale should be at least 0.70 (Nunnally 1978:245) or it may decrease to 0.60 in an exploratory research (Hair et al. 1998:118).
- Item means close to the centre of the range of possible scores is desirable (De Vellis 2003:94).
- A scale item that has relatively high variance is preferred (De Vellis 2003:93).

The result of the item analysis is presented in Table 3.4.

Table 3.4 Results of the Item Analysis

Construct	Total Items	Number of Items Dropped	Number of Items Retained	Cronbach's Alpha
Learner readiness	7	2	5	0.66
Performance-self efficacy	7	3	4	0.86
Motivation to transfer	6	2	4	0.78
Transfer effort-performance expectations	6	1	5	0.68
Performance-outcome expectations	5	1	4	0.83
Feedback	5	1	4	0.68
Peer Support	5	1	4	0.86
Supervisor Support	5	1	4	0.69
Openness to Change	6	2	4	0.85
Personal Outcomes-Positive	6	2	4	0.78
Personal Outcomes-Negative	5	1	4	0.76
Supervisor Sanctions	5	1	4	0.90
Personal capacity for Transfer	5	2	3	0.61
Opportunity to Use	5	1	4	0.80
Content Validity	7	2	5	0.75
Transfer Design	6	2	4	0.92
Sharing Behaviour	6	1	5	0.85
Intention to Share	5	1	4	0.84
Attitude toward Knowledge Sharing	5	0	5	0.63
Subjective Norm toward Knowledge Sharing	5	1	4	0.85
Perceived Behavioural Control toward Knowledge Sharing	5	2	3	0.86
Total	117	30	87	

As expected, several items had to be dropped due to low reliability. Nevertheless, all scales had an adequate number of items (at least three items) to achieve content adequacy (Cook et al. 1989). Two scales (*personal capacity for transfer* and *perceived behavioural control* toward *knowledge sharing*) had three items respectively while in other scales, items ranged from four to five items per scale. Although the Cronbach's Alpha reliability was based on a small sample of respondents (n = 28), it still served as an indicator that the scales were consistent in measuring the intended constructs.

Finally, 87 items were retained and used in the final questionnaire for data collection. The researcher maintained the wordings of all the retained items as the feedback received from the respondents during the pilot study indicated that they were understandable.

Step 9-Finalising the Questionnaire

In this step, the researcher repeated Step 4 (determine item sequence) and Step 5 (determine layout and appearance) as described earlier. Appendix A provides the final questionnaire used in data collection. The next section describes the sample and the data collection procedures taken in this thesis.

3.3.2 Sample and Data Collection

As outlined in Chapter 1, the target population of this study were government employees attending training at the National Institute of Public Administration, which is a central training organisation for government employees in Malaysia. When this study was proposed, the researcher was located in Melbourne and accessibility to the sample was limited. Therefore, purposive and accidental sampling techniques were used because these techniques were considered as more achievable. Accidental sampling involves using available cases for a study while purposive sampling refers to sample elements judged to be typical or representative, are chosen from the population (Ary, Jacobs & Razavieh 2002:169).

Once a letter of approval was received from the training centre (see Appendix C) and ethics clearance for data collection was granted by Victoria University on the 21st July 2005 (see Appendix D), the survey began from August 2005 until September 2005. The questionnaire in Bahasa Malaysia version was used in the data collection process. Prior to data collection, the researcher travelled to Malaysia and arranged several meetings with training officers at the training centre as well as with the training co-ordinators to identify the training programs to be held in the two month period of data collection. In these meetings, the researcher also discussed with them the best way to administer the questionnaire without disrupting the learning process. As a result of these meetings it was agreed that:

- The researcher would be responsible for preparation of the questionnaire for each training program. The questionnaire would be given to the training co-ordinator at least a day before training was to start.
- The researcher would be responsible to ensure that each questionnaire set contained at least 25 copies as no class was to have more than 25 trainees. However, in certain circumstances, the number may reach to sixty depending on the type of training.
- The researcher would also be responsible to ensure that each questionnaire set should be put into an envelope with the training name, day and date of training clearly identified on the cover.
- The questionnaire would be administered at the conclusion of the training program and would be collected by the training co-ordinator immediately upon completion. The researcher would be responsible for collection of returned questionnaires the next day.
- Trainees would be allowed to take back the questionnaire if they did not have the time to complete them in the class. If this happened, trainees would be asked to send back the questionnaire within two weeks to the training co-ordinator.
- The training officers and the training co-ordinators would take no responsibility should there be any questionnaire missing or for incomplete returned questionnaires.

Six training providers at the training centre agreed to participate in this study. Unfortunately, many training programs were cancelled due to low participation and accommodation problems. Despite this, 19 types of training programs were involved and were categorised into three types: general training (for example, quality report writing); management training (for example, human resource management) and computer training (for example, visual basic). A total of 437 questionnaires were distributed. Of these, 358 were returned, representing an 82 percent response rate. After checking all the returned questionnaires, only 291 were considered usable (complete) while 67 questionnaires were incomplete on the basis that they contained more than one page unanswered and therefore had to be excluded from analysis (see Appendix E for the number of distributed and returned questionnaires). Thus, the effective return rate for the questionnaires was 66.5 per cent. Despite being quite a bit lower than the initial 82 percent return rate, it is still a high rate of return for questionnaire administration which can in part be attributed to the effectiveness of the agreed list of responsibilities between researcher and training providers.

3.3.3 Analysis Strategy

This section describes the analysis strategy undertaken for data screening, checking for outliers, checking the multivariate assumptions, examining construct validity and reliability and hypothesis testing.

Data Screening

Once the data were entered, it was screened to ensure that no errors in data entry had occurred as clearly, these can distort the statistical analyses. This was done by detecting any 'out of range values' using the 'Descriptive' and 'Frequencies' commands using SPSS version 15 statistical software. Further, all negative-worded items were reversed scored so that higher scores indicate higher levels of agreements (Coakes & Steed 2003; Pallant 2005)(see Appendix F for the reversed scored items).

Checking for Outliers

Outliers refer to a substantial difference between the actual value for the dependent or independent variable and the predicted value (Hair et al. 1998). It may occur due to error in data entry. Therefore, the researcher checked the casewise diagnostics to detect cases that have standardised residual values above 3.0 or below –3.0 (Pallant 2005). If any case is found, Cook's Distance value in the residuals statistic table will be checked in order to know whether the strange cases are having any undue influence on the regression results. According to Pallant (2005), any value larger than 1.0 is a potential problem and the cases should be considered for removal.

In this thesis, the casewise diagnostics has identified one case (case number 58) with a residual value –3.596, which was below –3.0 (Pallant 2005). Further investigation found that, the respondent for case number 58 recorded a total motivation to transfer training score of 2.8, but the predicted value was 3.99, indicating that the respondent was less motivated than predicted. An inspection on the value of Cook's Distance indicated that the value was 0.27, which was less than 1.0. Thus, it was not considered as a major problem (Pallant 2005) and the case number 58 was retained.

Checking the Multivariate Assumptions: Multicollinearity, Normality, Linearity, Homoscedasticity and Independence of Residuals.

According to Hair et al. (1998), researchers should check the assumptions underlying multivariate analysis before any statistical analysis is undertaken to ensure that they are met. These assumptions are multicollinearity, normality, linearity, homoscedasticity and independence of residuals. The checking of these assumptions is described below.

First, the researcher checked for the impact of multicollinearity which refers to the relationship among the independent variables (Hair et al. 1998:156). The presence of multicollinearity is not desirable because as it increases, the predictive power of the independent variables decreases (Tabachnick & Fidell 2001). The following assessments were made to determine whether multicollinearity existed in this study. First, the correlation matrix for all variables was checked. A correlation above 0.90 is the first indicator of multicollinearity (Hair et al. 1998). In this thesis, the correlation matrix indicated that all the correlations were below 0.90 and thus, multicollinearity was not a problem (see Table 3.5 for the correlation matrix).

Table 3.5 Correlation Matrix

Variables	Mean	SD	Y1	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
Y1:Motivation to transfer	4.334	0.486	***0.81***																				
X1:Opportunity to use	3.444	0.734	0.29**	***0.83***																			
X2:Supervisor sanctions	2.233	0.870	-0.25**	-0.05	***0.87***																		
X3:Transfer design	4.172	0.489	0.33**	0.19**	-0.19**	***0.86***																	
X4:Content validity	4.029	0.567	0.46**	0.33**	-0.36**	0.32**	***0.78***																
X5:Personal outcomes-negative	3.200	0.827	0.25**	0.28**	0.10	0.17**	0.13*	***0.79***															
X6:Personal capacity for transfer	4.047	0.521	0.46**	0.23**	-0.15*	0.30**	0.38**	0.26**	***0.80***														
X7:Personal outcomes-positive	4.013	0.529	0.65**	0.30**	-0.18**	0.36**	0.35**	0.32**	0.41**	***0.72***													
X8:Supervisor support	3.791	0.637	0.33**	0.53**	0.24**	0.26**	0.30**	0.25**	0.31**	0.41**	***0.86***												
X9:Peer support	3.589	0.638	0.31**	0.51**	-0.11	0.31**	0.31**	0.34**	0.45**	0.39**	0.62**	***0.88***											
X10:Learner readiness	4.422	0.528	0.66**	0.22**	-0.25**	0.29**	0.34**	0.14*	0.36**	0.49**	0.28**	0.27**	***0.73***										
X11:Transfer effort-performance expectations	4.054	0.540	0.45**	0.46**	-0.18**	0.24**	0.59**	0.31**	0.35**	0.45**	0.48**	0.48**	0.40**	***0.85***									
X12:Openness to change	2.745	0.867	-0.07	-0.10	0.41**	-0.08	-0.09	0.15**	-0.10	-0.15**	-0.17**	-0.18**	-0.11	-0.08	***0.93***								
X13:Performance-outcomes expectations	3.385	0.659	0.14*	0.39**	0.04	0.12*	0.05	0.25**	0.23**	0.33**	0.35**	0.34**	0.06	0.33**	0.01	***0.79***							
X14:Performance-self efficacy	4.168	0.479	0.42**	0.15*	-0.14*	0.30*	0.32**	0.12*	0.56**	0.37**	0.27**	0.31**	0.36**	0.40**	-0.05	0.29**	***0.83***						
X15:Feedback	3.808	0.603	0.22**	0.34**	-0.09	0.29**	0.18**	0.24**	0.25**	0.44**	0.49**	0.41**	0.18**	0.35**	-0.16**	0.39**	0.40**	***0.81***					
X16:Sharing behaviour	3.944	0.583	0.31**	0.31**	-0.12*	0.35**	0.24**	0.20**	0.36**	0.33**	0.42**	0.46**	0.24**	0.35**	-0.10	0.30**	0.48**	0.47**	***0.83***				
X17:Attitude toward knowledge sharing	4.365	0.498	0.37**	0.16**	-0.24**	0.31**	0.39**	0.13*	0.43**	0.29**	0.23**	0.26**	0.47**	0.44**	-0.12*	0.11	0.60**	0.30**	0.41**	***0.91***			
X18:Perceived behavioural control	4.095	0.547	0.29**	0.18**	-0.10	0.32**	0.19**	0.22**	0.46**	0.23**	0.23**	0.28**	0.29**	0.32**	-0.02	0.27**	0.52**	0.26**	0.52**	0.51**	***0.77***		
X19:Subjective norms	3.979	0.599	0.26**	0.23**	-0.25**	0.33**	0.25**	0.20**	0.33**	0.22**	0.39**	0.35**	0.33**	0.36**	-0.06	0.25**	0.47**	0.35**	0.56**	0.57**	0.58**	***0.79***	
X20:Intention to share	4.165	0.459	0.41**	0.22**	-0.21**	0.38**	0.36**	0.23**	0.48**	0.35**	0.31**	0.36**	0.39**	0.49**	-0.05	0.21**	0.60**	0.37**	0.68**	0.62**	0.63**	0.58**	***0.86***

Note: * correlation is significant at the 0.05 level; ** correlation is significant at the 0.01 level. Coefficient alphas (α) are shown in bold italic and are located along the diagonal.

Next, the assumption of normality was checked. The assumption of normality is that errors of prediction are normally distributed about the predicted dependent variable score (Tabachnick & Fidell 2001:119). This assumption was checked through a normal probability plot, which compared the standardised residuals with the normal distribution. The normal distribution forms a straight diagonal line and the plotted residual values are compared with the diagonal. In this thesis, the plotted residual value lay in a reasonably straight diagonal line from bottom left to top right, indicating that the assumption of normality was met (Hair et al. 1998; Tabachnick & Fidell 2001; Pallant 2005) (see Appendix H).

Finally, checking the multivariate assumptions was made for linearity, homoscedasticity and independence of residuals simultaneously. The linearity of the relationship between dependent and independent variables represents the degree to which the change in the dependent variable is associated with the independent variable (Hair et al. 1998:173). Non-linear effects would result an underestimation of the actual strength of the relationship because correlations represent only the linear association between variables. On the other hand, the assumption of homoscedasticity refers to the assumption that dependent variable exhibit equal levels of variance across the range of predictor variable (Tabachnick & Fidell 2001:79). Homoscedasticity is desirable because the variance of the dependent variable being explained in the dependence relationship should not be concentrated in only a limited range of the independent values (Hair et al.1998:175). Further, independence of residual refers to the assumption that the residuals have a linear relationship with the predicted dependent variable scores, and that the variance of the residuals is the same for all predicted scores (Hair et al. 1998). These assumptions were checked by examining a scatterplot of the standardised residuals. The scatterplot indicated that the scores concentrated in the centre (along the 0 point), indicating that it met the assumptions for linearity, homoscedasticity and independence of residuals (Hair et al. 1998; Tabachnick & Fidell 2001; Pallant 2005) (see Appendix I).

Construct Validity

Validity is defined as the extent to which any measuring instrument measures what it is intended to measure (Kerlinger 1986:417). In this thesis, construct validity was examined through both content and construct validity. As content validity has been described in the questionnaire design section (see section 3.3.1, step 6), the discussion in this section is limited to the statistical analysis undertaken to examine construct validity.

The survey instrument was factor analysed using both exploratory factor analysis (principal component analysis) and confirmatory factor analyses using structural equation modelling to filter the best items that can represent the constructs under study. Exploratory factor analysis was used in this thesis to confirm the dimensions of the concepts that have been operationally defined as well as to indicate which of the items were most appropriate for each dimension (Hair et al. 1998; Hurley, Scandura, Schriesheim, Brannick, Vandenberg & Williams 1997; Spector 1992). Confirmatory factor analysis was then used because it provides the measurement error and a measure of model fit (Hair et al. 1998; Tabachnick & Fidell 2001). In transfer of training research, the use of exploratory and confirmatory factor analysis to examine construct validity was found in two studies (Naquin & Holton 2003; Tracey et al. 1995). However, according to Chin (1998), it should be regarded as exploratory when items were dropped due to poor wordings in order to increase the validity of the scale. In this thesis, three items were dropped due to poor wording. By dropping these items the validity of the constructs increased (see Chapter 4, section 4.2.4; 4.2.17; 4.2.19).

In exploratory factor analysis, the technique used to retain factors was the latent root criterion. This technique retained only factors having eigenvalues greater than 1 while factors having eigenvalues less than 1 were considered insignificant and disregarded (Hair et al. 1998). Further, varimax rotation was applied to increase the interpretability of factor rotation (Hair et al. 1998). Simple structure is deemed to be attained if each of the original items load on one, and only one factor (De Vellis 2003). Statistical significance of item loadings was assessed using the guidelines recommended by a number of researchers (Ford, MacCallum & Tait 1986; Hair et al. 1998). For example, Ford et al. (1986) suggested that only items with loadings greater than ± 0.40 are considered significant and used in defining factors. Hair et al. (1998:112) provided clearer guidelines for identifying significant item loading based on sample size. As the sample size used in this thesis was n=291, the cut-off point chosen for item loading was 0.35 and any items below this cut-off were not displayed in the results (Hair et al. 1998).

Then, the items retained in the exploratory factor analysis (principal component analysis) were submitted to a confirmatory factor analysis (structural equation modelling) using AMOS version 7 statistical software. In a confirmatory factor analysis, the measurement model for each construct was created. A measurement model specifies the relations of the observed measures to their posited underlying constructs (Anderson & Gerbing 1988). The Maximum Likelihood (ML) method was chosen to estimate the difference between the observed and estimated covariance matrices because it is the most common procedure with a sample size above 150 and efficient when the assumption of multivariate normality is met (Anderson & Gerbing 1988; Hair et al. 1998; Tabachnick & Fidell 2001). As described above, the sample size utilised here was n=291 and the assumption of normality was not violated (see Appendix H). Thus, the ML method was considered justified.

The measurement models were evaluated by examining the factor loading/regresssion weight of each item for statistical significance. The factor loading should be at least 0.50 and above for adequate individual item reliability (Bagozzi & Yi 1988). Thus, in this study the consideration to drop items was made if the factor loading for each item was below the recommended level 0.50. Further, the squared multiple correlation for each item shows the amount of variance captured by each item. The closer the value to 1.0, the better the item acts as an indicator of the construct (Diamantopoulos 1994).

Then, the construct's reliability and variance extracted were calculated using the formula provided by Hair et al. (1998) as stated below:

Construct reliability

$$= \frac{(\text{Sum of standardised loadings})^2}{(\text{Sum of standardised loadings})^2 + \text{Sum of indicator measurement error *}}$$

Variance extracted

$$= \frac{\text{Sum of squared standardised loadings}}{\text{Sum of squared standardised loadings} + \text{Sum of indicator measurement error}}$$

* Sum of indicator measurement error = 1 – (standardised loading)^2

(Source: Hair et al. 1998:624)

In this study, the cut-off value for construct reliability was 0.70 for the items to be considered as sufficient in representing the constructs (Hair et al. 1998). On the other hand, construct validity was obtained when the amount of variance extracted by the construct in relation to the amount of variance due to measurement error exceeds 0.50 (Fornell & Larcker 1981).

A mixture of fit indices was employed to assess the overall fit of the measurement models. The χ^2 statistic was used to measure the overall fit of the measurement models. In this study, the researcher looked for non-significant differences ($p>0.05$ or $p>0.01$) because the test was between the actual and predicted matrices (Hair et al. 1998). However, because the χ^2 statistic is sensitive to both small and large sample sizes (Kline 2005; Hair et al. 1998; Joreskog & Sorbom 1993), this study complements the χ^2 statistic with other goodness-of-fit measures such as the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Standardised Root Mean Square Residual (RMSR), the Tucker Lewis Index (TLI), the Comparative Fit Index (CFI), the Normed Fit Index (NFI) and the Root Mean Square Error of Approximation (RMSEA) (Hair et al. 1998). The recommended value for GFI, AGFI, TLI, CFI and NFI is 0.90 or greater where value less than 0.90 considered as poor fit (Hair et al. 1998). The RMSR should have value less than 0.10 where value equal to or greater than 0.10 would indicate poor fit (Kline 2005). The recommended value for RMSEA should be no more than 0.08 for reasonable error of approximation (Kline 2005; Hair et al. 1998).

When the measurement model did not show a good fit, the modification indices provided by AMOS were examined. The modification indices show the predicted decreased in χ^2 if items representing a construct are allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993). Items were allowed to correlate when inspection found that they were redundant due to poor wording.

Construct Reliability

Reliability refers to the precision of measurement (Roscoe 1975:130). Reliability is synonymous with other terms such as dependability, stability, consistency, predictability and accuracy (Kerlinger 1986:404). According to Nunnally (1978:229). Investigations of reliability should be made when new scales are developed. There are two key aspects of reliability: consistency of the items within a scale and stability of the scale over time (Hinkin 1995). Consistency of items (internal consistency) within a scale refers to the homogeneity of the items in the scale that tap the construct while stability refers to the ability of a scale to remain the same over time or yield the same results on repeated trials (Carmines & Zeller 1979:11).

In this thesis, the stability of the scale was not examined because the researcher encountered difficulty in obtaining the same group of people after a period of time. Therefore, the thesis only examined the consistency of the scale. Cronbach's coefficient alpha was used to examine the consistency of the entire scale (Nunnally 1978; Carmines & Zeller 1979; DeVellis 2003). The guideline provided by DeVellis (2003:95) was used to check the consistency of the entire scale:

below 0.60 (unacceptable);
between 0.60 and 0.65 (undesirable);
between 0.65 and 0.70 (minimally acceptable);
between 0.70 and 0.80 (respectable);
between 0.80 and 0.90 (very good); and
for values above 0.90, one should consider shortening the scale.

In this study, the desired cut-off for Cronbach's alpha was 0.70 because this value is the accepted level of internal consistency reliability (Carmines & Zeller 1979; De Vellis 2003). Further, internal consistency was also assessed by looking at the item-to-total correlation (the correlation of the item to the summated scale score), and the inter-item correlation (the correlation among items). Research has suggested that the rule of thumb for item-to-total correlation is above 0.50 and above 0.30 for inter-item correlations (Hair et al. 1998). Thus, in this study the desired cut-off for item-to-total correlation and inter-item correlation was 0.50 and 0.30 respectively. Therefore, any items below the cut-off values were dropped from analysis. The three items that were dropped as described earlier had item-to-total correlations and inter-item correlations below the desired cut-off (see Chapter 4, section 4.2.4; 4.2.17; 4.2.19).

Hypothesis Testing

This section describes the statistical techniques chosen for this study to test Hypotheses 1 to 10 in order to answer the six research questions in this thesis. This will be described below.

Testing Hypothesis 1 (H1):

H1: These transfer of training variables: *motivation to transfer*; secondary influences (*performance-self efficacy, learner readiness*); expected utility (*transfer effort-performance expectations, performance-outcomes expectations*); transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*); ability (*personal* *capacity for transfer, opportunity to use*), enabling (*content validity, transfer design*) and TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean score across different training types (general training, management/leadership training, computer training).

Multivariate analysis of variance (MANOVA) was used to test H1 because this hypothesis involved one categorical independent variables (training types: general training, management/leadership training, computer training) and more than one dependent variables (all the variables in the research framework are dependent variables) (Coakes & Steed 2003; Pallant 2005). In MANOVA analysis, researcher should check the equivalence of covariance matrices across groups (an example here is training types). According to Hair et al. (1998), a violation of this assumption has minimal impact if the groups are approximately of equal size (for example, if the largest group size divided by the smallest group size is less than 1.5). If it is more than 1.5, than researcher should check Box's Test (output generated from MANOVA) for equality of covariance matrices and the significant value should be larger than 0.001 (non-significant difference) to indicate the equality of covariance matrices across groups (Coakes & Steed 2003; Pallant 2005). However, using the Box's Test is not recommended by Harris (1985) because the test is overly powerful and it is likely to be established for large sample sizes.

In transfer of training research, one study was found to have such problem with Box's Test (Yamnill 2001). In Yamnill's (2001) study, Box's test was found to be significant, however, because the Box's test was not a robust test (Harris 1985), the researcher ran the MANOVA analysis and the results were reported. It was decided here to report the Box's Test results and run the MANOVA analysis whether or not the Box's Test is statistically significant. The researcher also checked the Levene's test of equality of error variance to ensure that the homogeneity of variance has not been violated. The test should be non-significant to meet the assumption (Coakes & Steed 2003; Pallant 2005).

In order to know whether the variables in H1 are differ in terms of their mean scores across the three different training types, the Wilks' Lambda value and its associated significance level were checked. Generally, if the significance level is less than 0.05, then the researcher can conclude that there is a difference in terms of the variables' means in H1 across training types. The smaller the Wilks' Lamda value, the bigger is the difference (Coakes & Steed 2003; Pallant 2005). Then, in order to investigate further whether all the variables differ in terms of their means or just some, the tests of between-subjects effects output box was checked. In this study, the significant value utilised was $p < 0.002$ (0.05 divided by 21 variables) (Coakes & Steed 2003; Pallant 2005). Thus, the researcher considered the results significant only if the significant value less than 0.002. This significant value was also used for variables that were significant but at the same time violated the assumption of homogeneity of variance using the Levene's test ($p < 0.01$). The assumption is violated when the significant value for Levene's Test is less than 0.01 (Coakes & Steed 2003; Pallant 2005). According to Coakes & Steed (2003), if the assumption is violated, researchers must interpret finding at a more conservative alpha level. Thus, the significant value less than 0.002 was used. Finally, the researcher checked the estimated marginal means output box in order to know which variables had higher and lower scores (Coakes & Steed 2003; Pallant 2005). It was decided here that the mean scores equal to or above 4.0 would be considered a strong level; between 3.5 and 4.0, moderate, and below 3.50, poor. It should be noted here that Likert point scale ranging from 1-Strongly Disagree to 5-Strongly Agree was utilised.

Testing Hypothesis 2 (H2):

H2: These transfer of training variables: *motivation to transfer*; secondary influences (*performance-self efficacy, learner readiness*); expected utility (*transfer effort-performance expectations and performance-outcomes expectations*); transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-*

positive, personal outcomes-negative, supervisor sanctions); ability (*personal capacity for transfer and opportunity to use*), enabling (*content validity and transfer design*) and TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing and perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean score across trainees' demographics (gender, age, level of education, work experience, position of employment).

Multivariate analysis of variance (MANOVA) was used to test H2 because this hypothesis involved six categorical independent variables (gender, age, level of education, work experience, position of employment) and more than one dependent variables (all the variables in the research framework are dependent variables) (Coakes & Steed 2003; Pallant 2005). However, the six categorical independent variables were analysed separately one by one using one-way MANOVA (one categorical independent variable and all the variables in the research framework will be the dependent variables). The procedures in this analysis were identical to those described for testing H1.

Testing Hypothesis 3 (H3) to Hypothesis 7 (H7):

H3: Secondary influences variables (*performance-self efficacy, learner readiness*) will explain a significant proportion of variance in *motivation to transfer*.

H4: Expected utility variables (*transfer effort-performance expectations, performance-outcomes expectations*) will explain a significant proportion of variance in *motivation to transfer*.

H5: Transfer climate variables (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*) will explain a significant proportion of variance in *motivation to transfer*.

H6: Enabling variables (*content validity, transfer design*) will explain a significant proportion of variance in *motivation to transfer*.

H7: Ability variables (*personal capacity for transfer, opportunity to use*) will explain a significant proportion of variance in *motivation to transfer*.

Multiple regression analysis was used to test H3, H4, H5, H6 and H7 because these hypotheses involved one dependent variable and more than one independent variable (Coakes & Steed 2003; Pallant 2005). For H3, the independent variables were *performance self-efficacy* and *learner readiness* while *motivation to transfer* was the dependent variable. For H4, the independent variables were *transfer effort-performance expectations* and *performance-outcomes expectations* while *motivation to transfer* was the dependent variable. For H5, the independent variables were *feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative* and *supervisor sanctions* while *motivation to transfer* was the dependent variable. For H6, the independent variables were *content validity* and *transfer design* while *motivation to transfer* was the dependent variable. For H7, the independent variables were *personal capacity for transfer* and *opportunity to use* while *motivation to transfer* was the dependent variable.

As described earlier, in multiple regression analysis, multicollinearity is not desirable because as it increases, the predictive power of the independent variables decreases (Hair et al. 1998). Therefore, the researcher checked the tolerance value and its inverse, the variation of inflation factor (VIF) (output generated from multiple regression analysis). Tolerance represents the amount of variability of the selected independent variable not explained by the other independent variable. Thus, very small tolerance values (and thus, large VIF values) denote high collinearity (Coakes & Steed 2003; Pallant 2005). In this study, the cut-off point for determining the presence of multicollinearity was less than 0.10 for the tolerance value and above 10 for the VIF (Hair et al. 1998).

Testing Hypothesis 8 (H8)

H8: *Intention to share* will be significantly correlated to *sharing behaviour* and *sharing behaviour* will be significantly correlated to *motivation to transfer*.

H8 was tested using the Pearson correlation because this hypotheses involved two variables to examine the relationship between *intention to share* and *sharing behaviour* and two variables to examine the relationship between *sharing behaviour* and *motivation to transfer* (Coakes & Steed 2003; Pallant 2005). When examining the strength of the relationship between *intention to share* and *sharing behaviour* and between *sharing behaviour* and *motivation to transfer*, the researcher used the guidelines provided by Cohen (1988) as stated below.

r = 0.10 to 0.29 small
r = 0.30 to 0.49 medium
r = 0.50 to 1.00 larger

Testing Hypothesis 9 (H9)

H9: *Attitude, subjective norms and perceived behavioural* control toward knowledge sharing will explain a significant proportion of the variance in *intention to share*.

H9 was tested using multiple regression analysis. The procedures in this analysis were identical to those described for testing H3, H4, H5, H6 and H7.

Testing Hypothesis 10 (H10)

H10: *Sharing behaviour* will have a direct and indirect relationship (via the significant predictors identified in research question three) with *motivation to transfer*.

H10 was tested using structural equation modelling (SEM) because of its advantage to examine the direct and indirect relationships simultaneously (via the significant predictors identified in research question three) with *motivation to transfer*, which cannot be done using multiple regression analysis or correlational analysis (Hair et al. 1998). When modelling with SEM, the sample size required, according to Tabachnick and Fidell (2001:660) is 10 subjects per estimated parameter. Due to the sample size used in this study (n = 291), the researcher was unable to include all the significant predictors identified in research question three into the structural model. Therefore, the significant predictors that had the strongest beta value from each category of variables were selected into the structural model (see Chapter 5; section 5.3.6).

When developing the structural model, the regression coefficient (λ) and the measurement error variances (θ) for each variable in the structural model were calculated as suggested by Politis (2001; 2002; 2003) and Joreskog and Sorbom (1989). The regression coefficient reflects the regression of each composite variable on its latent variable and the measurement error variance (θ) associated with each composite variable (Politis 2001; 2002; 2003). In this study, where the matrix to be analysed was a matrix of covariances (the correlation and its variance) amongst the composite variables, then λ and θ were calculated using the equations stated below (see Appendix N for the calculation of λ and θ for each variable included in the structural model).

$$\lambda = \sigma\sqrt{\alpha}$$

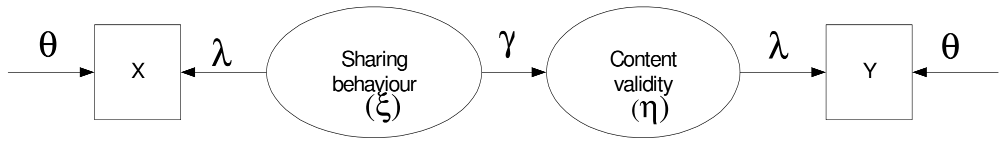
$$\theta = \sigma^2(1-\alpha)$$

where:
λ = regression coefficients
θ = measurement error variances
α = reliability coefficient
σ = standard deviation of composite measure; and
σ^2 = error variance

(Source: Politis 2001:359)

In turn, these values have been used as fixed parameters in the structural model as shown in the simplified structural model of Figure 3.2.

Figure 3.2 Simplified Structural Model



Where:

X and Y = composite latent variables derived from measurement model
λ = regression coefficients computed by equation 3
θ = measurement error variances computed by equation 4
γ = the regression coefficient of the regression of η on ξ

(Source: Politis 2001)

The fit indices (χ^2; GFI; AGFI; RMSR; TLI; CFI; NFI; RMSEA) and the desired cut-off used to assess the overall fit of the structural model were similar to those described in section 3.3.3 when evaluating measurement models for construct validity. When the structural model does not fit, it has become common practice to modify the model by deleting parameters that are not significant and adding the parameters that improve the fit (Hair et al. 1998). In this study adding or deleting parameters from the structural model were made based on theoretical justification or common sense and not based solely on the modification indices (Hair et al. 1998; Joreskog & Sorbom 1993; Arbuckle & Wothe 1999) (see Chapter Five; section 5.3.6).

When examining the strength of the relationships in the structural model, the researcher used the guidelines provided by Kline (2005) which assists in the interpretations of path coefficients (λ), with small, medium or large effects. Standardised path coefficients with values less than 0.10 indicate a small effect. Values around 0.30 indicate a medium effect and values above 0.50 indicate a large effect. Further, the squared multiple correlations indicate the variance explained in the endogenous constructs (outcome constructs) accounted by its predictors

(Arbuckle & Wothe 1999; Joreskog & Sorbom 1993). The standardised path coefficients, the squared multiple correlations and the interpretation guidelines offered by Kline (2005) were used when examining the results.

3.4 Summary

This chapter described the development of the conceptual framework and the methodology chosen to test the relationships hypothesised in the conceptual framework. Based on the conceptual framework, this thesis argued that secondary influence variables (*learner readiness, performance self-efficacy*), expected utility variables (*transfer effort-performance expectations, performance-outcomes expectations*), transfer climate variables (*feedback, peer support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*), enabling variables (*content validity, transfer design*) and ability variables (*personal capacity for transfer, opportunity to use*) would have a direct influence on *motivation to transfer*. Further, this thesis contributes to understanding of *motivation to transfer* learning by adding the variables pertaining to *sharing behaviour* which was hypothesised as being linked to *motivation to transfer*.

The variables depicted in the conceptual framework were measured using a multiple items questionnaire. This chapter described the framework for questionnaire design as well as the steps taken to produce item generation, content validity, pilot testing and finalising the questionnaire. The sample chosen comprised 291 trainees from the Malaysian public sector and the procedures undertaken for data collection were also described. The chapter then moved to a discussion of the analysis strategy for data screening, checking for outliers and the multivariate assumptions, examining construct validity using exploratory factor analysis (principal component analysis) and examining construct reliability using Cronbach's alpha. Finally, the statistical techniques used to test the hypotheses formulated in this thesis were described. These included multivariate analysis of variance (MANOVA), multiple regression analysis, Pearson correlation and structural equation modelling.

The next chapter continues the methodology for this study with a focus on construct validity using exploratory factor analysis (principal component analysis) and confirmatory factor analysis (structural equation modelling). Construct reliability using Cronbach's alpha is also described in the next chapter.

CHAPTER 4

CONSTRUCT VALIDITY AND RELIABILITY

4.1 Introduction

In Chapter 3, the development of the conceptual framework was described along with the methodology chosen to examine the 10 hypotheses. The chapter also detailed the procedures undertaken to examine construct validity and reliability using exploratory factor analysis (principal component analysis), confirmatory factor analysis (structural equation modelling) and Cronbach's alpha. This chapter continues the discussion on methodology through a presentation of the results of construct assessment using these techniques. The chapter confirms that all constructs measure what they intended to measure and display good psychometric properties (validity and reliability) to investigate the relationships hypothesised in this thesis.

4.2 Construct Assessment

Construct assessment was conducted and items for each construct were analysed individually using exploratory factor analysis (principal component analysis) and Cronbach's alpha for internal consistency reliability. A summary of the construct assessment is provided below (a more detailed discussion was provided in Chapter 3):

In the exploratory factor analysis:

- Statistical Package for Social Sciences (SPSS) version 15 was utilised.
- All constructs were factor analysed with principal component analysis (varimax rotation) (Hair et al. 1998).

- Only factors having eigenvalue above 1 were considered significant and retained (Hair et al. 1998).
- The cut-off point for item loading was 0.35 and any items below the desired cut-off were not displayed in the results (Hair et al. 1998).
- The consistency among the items was checked using Cronbach's alpha (desired cut-off was 0.70) (Carmines & Zeller 1979; De Vellis 2003). In addition, internal consistency among the items was also checked by looking at the item-to-total correlation (desired cut-off 0.50) and inter-item correlation (desired cut-off 0.30) (Hair et al. 1998). Any items below the desired cut-off for Cronbach's alpha, item-to-total correlation and inter-item correlation respectively were dropped.

In the confirmatory factor analysis:

- The Analysis of Moment Structure (AMOS) version 7 was utilised.
- The measurement models for each construct were constructed.
- The measurement models were evaluated by examining the factor loading for each item. The desired cut-off for factor loading was taken to be at least 0.50 for adequate individual item reliability (Bagozzi & Yi 1988).
- The χ^2 statistic was used to measure the overall fit of the measurement models. In this thesis, the researcher looked for non-significant differences ($p>0.05$ or $p>0.01$) because the test was between the actual and predicted matrices (Hair et al. 1998).
- Other fit indices utilised were Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Standardised Root Mean Square Residual (RMSR), the Tucker Lewis Index (TLI), the Comparative Fit Index (CFI), the Normed Fit Index (NFI) and the Root Mean Square Error of Approximation (RMSEA) (Hair et al. 1998). The recommended value for GFI, AGFI, TLI, CFI and NFI is 0.90 or greater where value less than 0.90 considered as poor fit (Hair et al. 1998). The RMSR should have value less than 0.10 where value equal to or greater than 0.10 would indicate poor fit (Kline 2005). The recommended value for RMSEA should be no more than 0.08 for reasonable error of approximation (Kline 2005; Hair et al. 1998).

- When the measurement model did not show a good fit, the modification indices provided by AMOS version 7 were examined. Items were allowed to correlate when inspection found that they were redundant due to poor wording (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993).
- Construct reliability and variance extracted were calculated using the formula provided by Hair et al. (1998) (see Chapter 3). The desired cut-off was 0.70 and 0.50 for construct reliability and variance extracted respectively (Fornell & Larcker 1981).

The next section details the outcomes of the tests conducted on each construct. In the first stage, principle component analysis was conducted followed by a reliability analysis and finally the measurement model for each construct was developed. In total there were five *learner readiness* items; four *performance-self efficacy* items; four *motivation to transfer* items; five *transfer effort-performance expectations* items; four *performance-outcome expectations* items; four *feedback* items; four *peer support* items; four *supervisor support* items; four *openness to change* items; four *personal outcomes-positive* items; four *personal outcomes-negative* items; four *supervisor sanctions* items; three *personal capacity for transfer* items; four *opportunity to use* items; five *content validity* items; four *transfer design* items; five *sharing behaviour* items; four *intention to share* items; five *attitude toward knowledge sharing* items; four *subjective norm toward knowledge sharing* items; and three *perceived behavioural control toward knowledge sharing* items. A detailed description of the definition of each construct was presented in Table 1.1 in Chapter 1.

4.2.1 The *Learner Readiness* Construct

Principal component analysis with varimax rotation was conducted on the five *learner readiness* items. As expected, only one factor was extracted (eigenvalue above 1) which accounted for approximately 55.36 percent of the total variance, confirming the unidimensionality of this construct (De Vellis 1991; Hair et al. 1998). All items had factor loading above the recommended cut-off 0.35 (Hair et al. 1998) (see Table 4.1). Therefore, no items were dropped following this stage of item testing.

Table 4.1 Learner Readiness Principal Component Analysis

Items	Factor : Learner Readiness
Q1. I know that this training is good for me.	0.66
Q2. I applied for this training on my own.	0.58
Q5. I am definitely interested to join this training.	0.83
Q8. I am definitely ready to join this training.	0.80
Q9. I knew that I would obtain something beneficial from this training.	0.81
Number of cases	291
Eigenvalue	2.77
Percentage of Variance	55.36
Cronbach's alpha	0.73

Reliability analysis was also conducted with these items. The results indicated that all items had item-total correlation above 0.50 except two items (Q1=0.47 and Q2=0.41) (see Appendix J) which were slightly below the recommended level of 0.50. Further inspection on the inter-item correlation matrix revealed that all items were above the recommended cut-off, 0.30 (Hair et al. 1998) (see Appendix J). The Cronbach's alpha was calculated at 0.73, also above the recommended cut-off, 0.70 (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, no items were dropped for this scale.

Next, the measurement model for the *learner readiness* construct was constructed with the five items as depicted in Figure 4.1.

Figure 4.1 Measurement Model:
Learner Readiness Construct

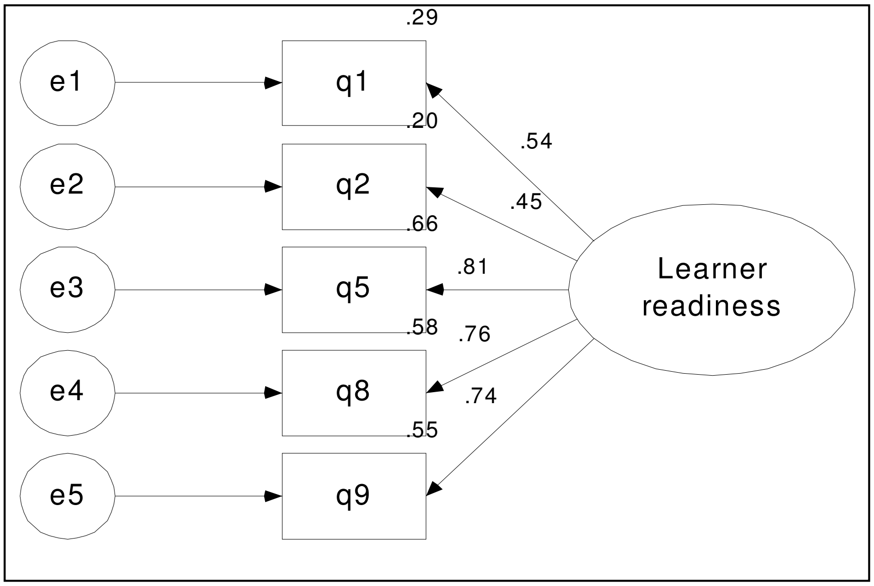


Table 4.2 Fit Indices for Learner Readiness Construct

χ^2 value	7.519	RMSR	0.011
Degrees of freedom	5	TLI	0.988
p value	0.185	CFI	0.994
GFI	0.989	NFI	0.983
AGFI	0.967	RMSEA	0.042

The measurement model for the *learner readiness* construct produced a good model fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loading for all items were also above the recommended cut-off, 0.50 indicating adequate individual item reliability (Bagozzi & Yi 1988). There was one exception: q2=0.45. However, despite the exception, this item was retained because the fit indices supported a good fit with GFI, AGFI, NFI, TLI and CFI above the desired cut-off, 0.90 (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08 respectively (Kline 2005) (see Table 7.23). The construct reliability was above the recommended level 0.70 (Hair et al. 1998) and the variance extracted by the construct was slightly below the recommended 0.50 cut-off due to measurement error (Fornell & Larcker 1981) (see Table 4.3). Despite the slightly lower variance extraction, principal component analysis with varimax rotation revealed that the variance extracted was 55.36 percent, clearly above the 50 percent, indicating that this construct possessed adequate reliability and validity.

Table 4.3 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Learner Readiness Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Motivation to transfer	4.422	0.528	0.731	0.80	0.455

Note: see Appendix K for construct reliability and variance extracted workings.

4.2.2 The *Performance-Self Efficacy* Construct

Principal component analysis with varimax rotation was conducted on the four *performance-self efficacy* items. Results indicated that only one factor was extracted (eigenvalue above 1), confirming the unidimensionality of this construct (De Vellis 1991; Hair et al. 1998). The percentage of variance extracted was approximately 67.16 percent. All items had factor loadings above the recommended cut-off, 0.35 (Hair et al. 1998) (see table 4.4). Therefore, no items were dropped following this stage of item testing..

Table 4.4 Performance-Self Efficacy Principal Component Analysis

Items	Factor: Performance-Self Efficacy
Q59. I am confidence to increase my job performance.	0.74
Q60. I have the capabilities to increase my job performance.	0.82
Q63. I am confident that I can improve my job performance because I am a discipline person.	0.85
Q64. I am confident that I can improve my job performance because I am a hardworking person.	0.85
Number of cases	291
Eigenvalue	2.69
Percentage of Variance	67.16
Cronbach's alpha	0.83

Following this, reliability analysis was conducted with these items. The results indicated that all items displayed item-total correlation and inter-item correlation above the desired cut-offs, 0.50 and 0.30 respectively (Hair et al. 1998) (see

Appendix J). Cronbach's alpha was 0.83, also above the recommended cut-off, 0.70 (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, no items were dropped from this scale.

Next, the measurement model for *performance-self efficacy* construct was dimensioned with the four items as depicted in Figure 4.2 below.

Figure 4.2 Measurement Model:
Performance-Self Efficacy Construct

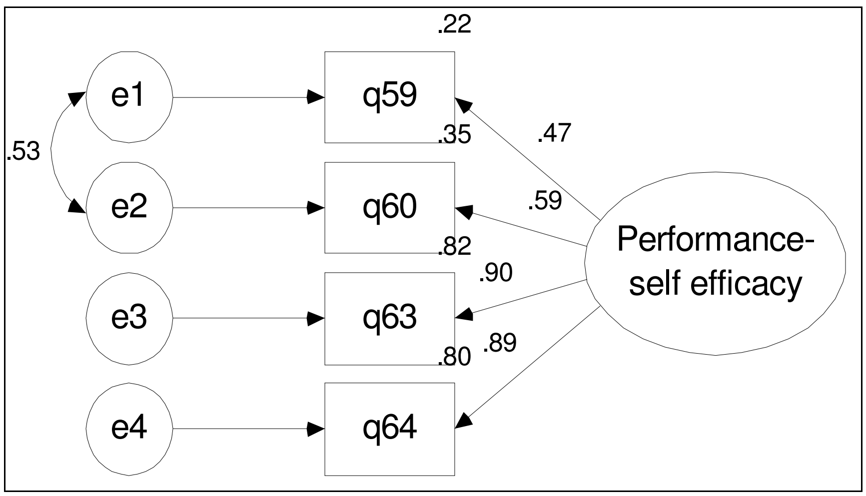


Table 4.5 Fit Indices for Performance-Self Efficacy Construct

χ^2 value	0.447	RMSR	0.001
Degrees of freedom	1	TLI	1.006
p value	0.504	CFI	1.000
GFI	0.999	NFI	0.999
AGFI	0.992	RMSEA	0.000

The $\chi 2$ statistic for the initial measurement model for the *performance-self efficacy* construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination on the modification indices showed that major improvements could be achieved if errors for Q59 and Q60 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.2). When, this was done, the model produced an acceptable fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998).

The factor loading for all items were also above the recommended cut-off, 0.50 (Bagozzi & Yi 1998) except for one item (q59), which was slightly below the 0.50 cut-off. However, this item was retained because the fit indices showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08 respectively (Kline 2005) (see Table 4.5). Construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.6).

Table 4.6 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Performance-Self Efficacy Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Performance -self efficacy	4.168	0.479	0.832	0.816	0.543

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.3 The *Motivation to Transfer* Construct

Principal component analysis with varimax rotation was conducted on the four *motivation to transfer* items. As expected, only one factor was extracted (eigenvalue above 1), again confirming the unidimensionality of this construct (De Vellis 1991; Hair et al. 1998). The percentage of variance extracted was approximately 63.67 percent. All items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.7). Therefore, no items were dropped following this stage of item testing.

Table 4.7 Motivation to Transfer Principal Component Analysis

Items	Factor: Motivation to Transfer
Q3. I will put into practice what I have learned from the training to the office.	0.78
Q6. I will make sure that what I have learned from the training will be put into practice for job benefit.	0.86
Q10. I will work as hard as possible to put into practice what I have learned for job benefit.	0.81
Q12. I will do a plan to put into practice what I have learned after I get back to the offfice.	0.73
Number of cases	291
Eigenvalue	2.55
Percentage of Variance	63.67
Cronbach's alpha	0.81

Then, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations above 0.50 and the inter-item correlation matrix was above the 0.30 recommended values (Hair et al. 1998) (see Appendix J). Cronbach's alpha for this scale was calculated at 0.81, also above the recommended cut-off 0.70 (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, no items were dropped for this scale.

Next, the measurement model for *motivation to transfer* construct was developed with the four items as depicted in Figure 4.3.

Figure 4.3 Measurement Model: Motivation to Transfer Construct

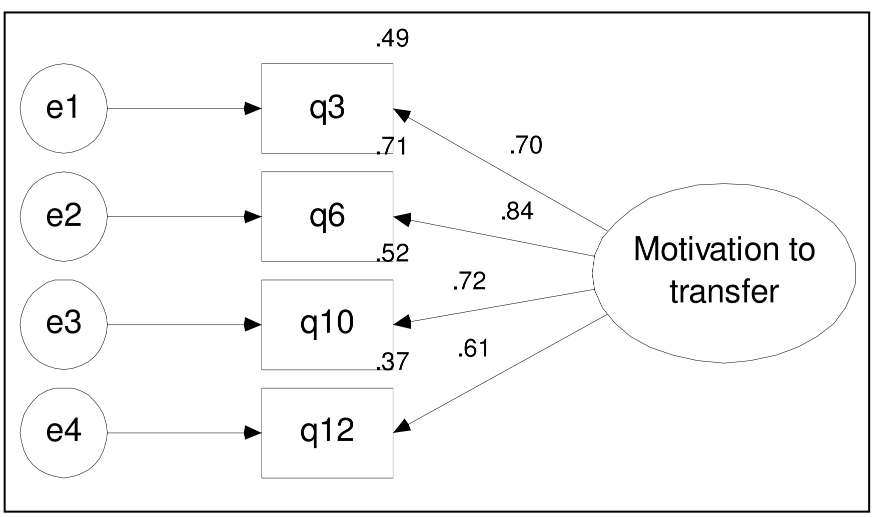


Table 4.8 Fit Indices for Motivation to Transfer Construct

χ^2 value	6.027	RMSR	0.009
Degrees of freedom	2	TLI	0.968
p value	0.049	CFI	0.989
GFI	0.989	NFI	0.984
AGFI	0.947	RMSEA	0.083

The measurement model for motivation to transfer produced a good model fit with the data with a non-significant $\chi 2$ statistic ($p>0.01$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loading for all items were also above the recommended 0.50 cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988). Further, the fit indices showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). However, the RMSR was below the recommended level of 0.10, and the RMSEA was slightly above the recommended level of 0.08 (Kline 2005) (see Table 4.8). The construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.9).

Table 4.9 Descriptive Statistics, Cronbach's alpha, Construct Reliability and Variance Extracted for Motivation to Transfer Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Motivation to transfer	4.334	0.486	0.806	0.811	0.522

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.4 The *Transfer Effort-Performance Expectations* Construct

Principal component analysis with varimax rotation was conducted on the five *transfer effort-performance expectations* items. As expected, only one factor was extracted (eigenvalue above 1), again confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). The percentage of variance extracted was approximately 55.92 percent. This time, all items had factor loadings above the 0.35 cut-off (Hair et al. 1998) except for one item (Q53) which had a factor loading of 0.29. Further inspection found that this item was a negative worded item and it was performing poorly due to its poor wording (see Appendix F for the negative worded items). Therefore, action was taken to drop this item and the program was-rerun. Results indicated that the percentage of variance increased to approximately 68.48 percent. Further, this time, all items had factor loadings above the recommended cut-off 0.35 (Hair et al. 1998) (see Table 4.10).

Table 4.10 Transfer Effort-Performance Expectations Principal Component Analysis

Items	**Factor: Transfer Effort-Performance Expectations**
Q46. I expect my work will be more efficient if I put into practice what I have learned from the training.	0.84
Q47. I expect my quality of work will be better if I put into practice what I have learned from the training.	0.86
Q50. I expect that my work will be more effective if I put into practice what I have learned from the training.	0.81
Q51. I expect that my productivity will be increased if I put into practice what I have learned from the training.	0.80
Number of cases	291
Eigenvalue	2.74
Percentage of Variance	68.48
Cronbach's alpha	0.85

Then, reliability analysis was conducted with the remaining four items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs of 0.50 and 0.30 respectively (Hair et al. 1998) (see Appendix J). The Cronbach's alpha for this scale was calculated at 0.85, also above the recommended cut-off 0.70 (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, the remaining four items were retained for this scale.

Next, the measurement model for *transfer effort-performance expectations* construct was developed with the four items as depicted in Figure 4.4 below.

Figure 4.4 Measurement Model:
Transfer Effort-Performance Expectations Construct

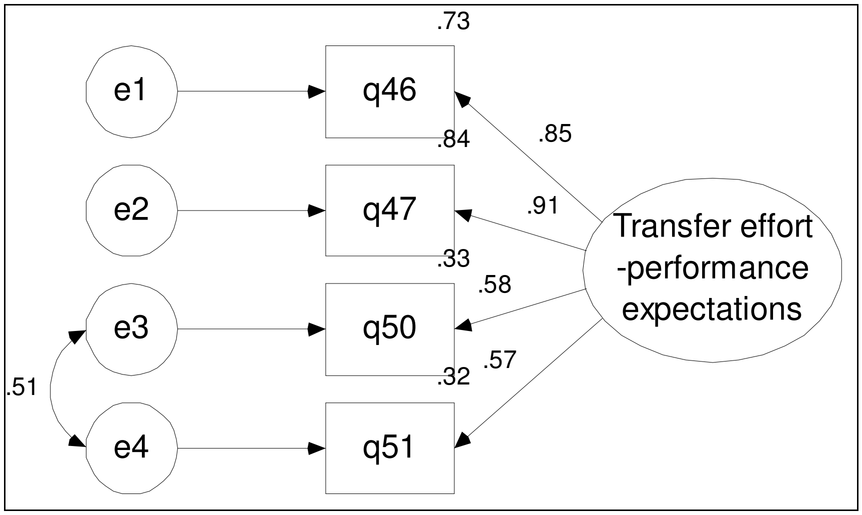


Table 4.11 Fit Indices for Transfer Effort-Performance Expectations Construct

χ^2 value	1.148	RMSR	0.002
Degrees of freedom	1	TLI	0.998
p value	0.284	CFI	1.000
GFI	0.998	NFI	0.998
AGFI	0.980	RMSEA	0.023

The $\chi 2$ statistic for the initial measurement model for the *transfer effort-performance expectations* construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for q50 and q51 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.4). When, this was done, the model produced an acceptable fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items also above the recommended 0.50 cut-off indicated adequate individual item reliability (Bagozzi & Yi 1998). The fit indices also showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired cut-off, 0.90 (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.11). Construct reliability above the recommended level of 0.70 (Hair et al. 1998) and variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.12).

Table 4.12 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Transfer Effort-Performance Expectations Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Transfer effort-performance expectations	4.054	0.540	0.846	0.826	0.553

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.5 The *Performance-Outcomes Expectations* Construct

Principal component analysis with varimax rotation was conducted on the four *performance-outcome expectations* items. As expected, only one factor was extracted (eigenvalue above 1), again confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). The percentage of variance extracted was approximately 61.46 percent. Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.13). Therefore, no items were dropped following this stage of item testing.

Table 4.13 Performance-Outcomes Expectations Principal Component Analysis

Items	Factor: Performance-Outcomes Expectations
Q48. I expect that I will receive various facilities if my job performance increased.	0.82
Q49. I expect that I will be more entrusted if my job performance increased.	0.70
Q52. I expect that I will be rewarded if my job performance increased.	0.85
Q54. I expect that I will be promoted if my job performance increased.	0.76
Number of cases	291
Eigenvalue	2.46
Percentage of Variance	61.46
Cronbach's alpha	0.79

Then, reliability analysis was conducted with these items. Results indicated that all items had item-total correlation and inter-item correlation above the recommended cut-offs, 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). The Cronbach's alpha for this scale was calculated at 0.79, also above the recommended cut-off 0.70 (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, no items were dropped from this scale.

Then, the measurement model for *performance-outcomes expectations* construct was developed with the four items as depicted in Figure 4.5 below.

Figure 4.5 Measurement Model:
Performance-Outcomes Expectations Construct

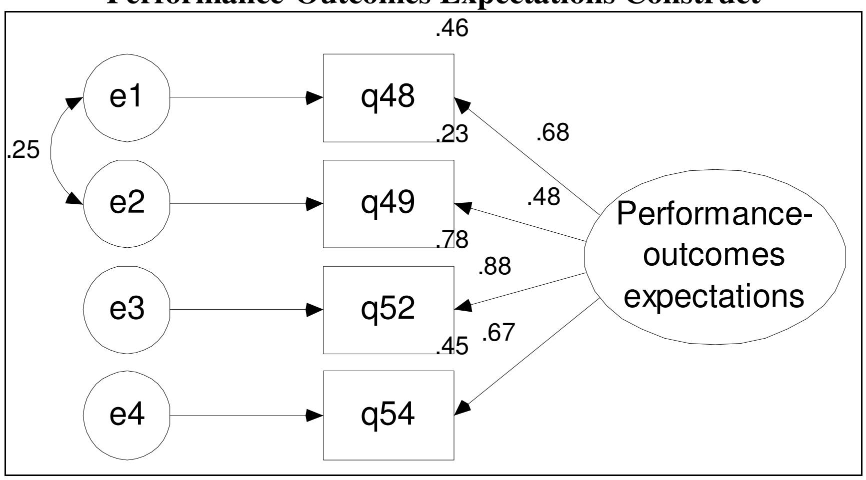


Table 4.14 Fit Indices for Performance-Outcomes Expectations Construct

χ^2 value	0.860	RMSR	0.006
Degrees of freedom	1	TLI	1.002
p value	0.354	CFI	1.000
GFI	0.999	NFI	0.998
AGFI	0.985	RMSEA	0.000

The $\chi 2$ statistic for the initial measurement model for the *performance-outcomes expectations* construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for q48 and q49 were allowed to correlate (Arbuckle & Wothe

1999; Joreskog & Sorbom 1993) (see Figure 4.5). When, this was done, the model produced a good fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended cut-off 0.50 (Bagozzi & Yi 1998) except for one item (q49). In this case, the factor loading was slightly below the 0.50 cut-off. However, this item was retained because the fit indices showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.14). Construct reliability was above the recommended level 0.70 (Hair et al. 1998). However, the variance extracted by the construct was slightly below the desired cut-off 0.50 due to measurement error (Fornell & Larcker 1981) (see Table 4.15). Despite the slightly lower variance extraction, principal component analysis with varimax rotation revealed that the variance extracted was 61.46 percent, clearly above the 50 percent, indicating that this construct possessed adequate reliability and validity.

Table 4.15 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Performance-Outcomes Expectations Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Performance -outcomes expectations	3.385	0.659	0.789	0.779	0.479

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.6 The *Feedback* Construct

Principal component analysis with varimax rotation was conducted on the four *feedback* items. As expected, only one factor was extracted (eigenvalue above 1) which accounted for approximately 64.21 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.16). Therefore, no items were dropped following this stage of item testing.

Table 4.16 Feedback Principal Component Analysis

Items	Factor: Feedback
Q61. After training, I will receive feedback to improve what I have learned from the training.	0.69
Q62. I will accept any constructive comment every time I put into practice what I have learned from the training.	0.75
Q65. I will accept any lesson every time I try to put into practice what I have learned from the training.	0.87
Q66. I will accept any good advice every time I try to put into practice what I have learned from the training.	0.88
Number of cases	291
Eigenvalue	2.57
Percentage of Variance	64.21
Cronbach's alpha	0.81

Then, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs, 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). The Cronbach's alpha for this scale was calculated at 0.81, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for *feedback* construct was constructed with the four items as depicted in Figure 4.6 below.

Figure 4.6 Measurement Model: Feedback Construct

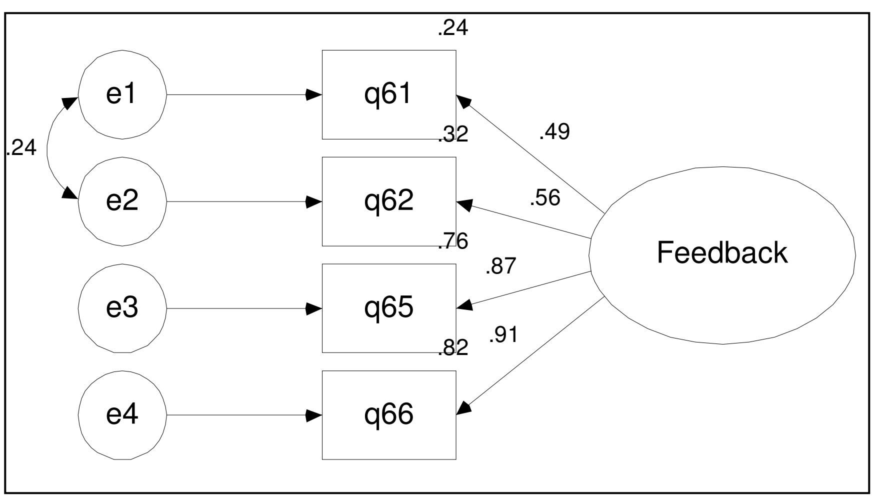


Table 4.17 Fit Indices for Feedback Construct

χ^2 value	0.937	RMSR	0.004
Degrees of freedom	1	TLI	1.001
p value	0.333	CFI	1.000
GFI	0.998	NFI	1.000
AGFI	0.984	RMSEA	0.000

The $\chi 2$ statistic for the initial measurement model for feedback was significant ($p=0.000$), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for Q61 and Q62 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.6).

When, this was done, the model produced a good fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended cut-off 0.50, indicating adequate individual item reliability (Bagozzi & Yi 1988). The fit indices showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.17). Construct reliability was above the recommended level 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.18).

Table 4.18 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Feedback Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Feedback	3.808	0.603	0.809	0.811	0.535

Note: See Appendix K for construct reliability and variance extracted workings.

6.2.7 The *Peer Support* Construct

Principal component analysis with varimax rotation was conducted on the four *peer support* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 72.88 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.19). Therefore, no items were dropped following this stage of item testing.

Table 4.19 Peer Support Principal Component Analysis

Items	Factor: Peer Support
Q16. My colleague will support me to put into practice what I have learned from the training.	0.88
Q17. My colleague is willing to help me to put into practice what I have learned from the training.	0.88
Q23. My colleague is willing to give his opinions in helping me to put into practice what I have learned from the training.	0.85
Q24. My colleague will encourage me to apply what I have learned from the training in carrying out duties.	0.81
Number of cases	291
Eigenvalue	2.92
Percentage of Variance	72.88
Cronbach's alpha	0.88

Then, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). The Cronbach's alpha for this scale was calculated at 0.88, also above the recommended cut-off 0.70 (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for *peer support* construct was constructed with the four items as depicted in Figure 4.7 below.

Figure 4.7 Measurement Model:
Peer Support Construct

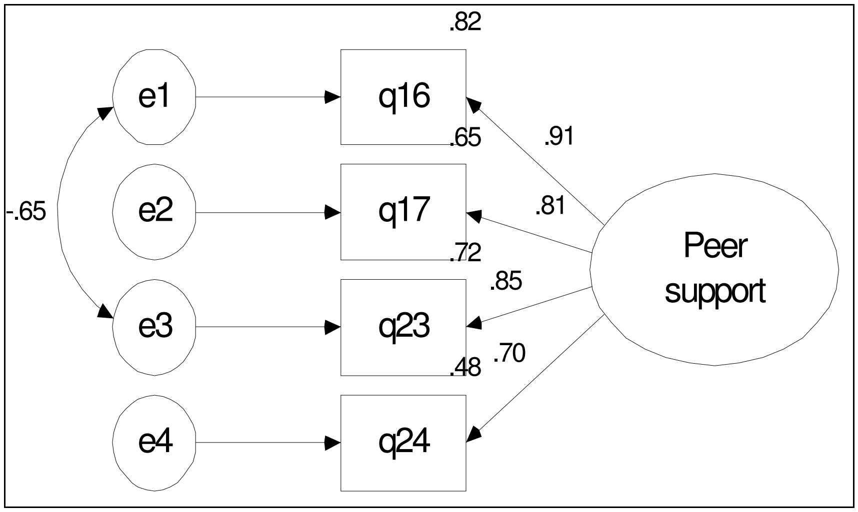


Table 4.20 Fit Indices for Peer Support Construct

χ^2 value	0.391	RMSR	0.003
Degrees of freedom	1	TLI	1.006
p value	0.532	CFI	1.000
GFI	0.999	NFI	0.999
AGFI	0.993	RMSEA	0.000

The $\chi 2$ statistic for the initial measurement model for the *peer support* construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination on the modification indices showed that major improvements could be achieved if errors for q16 and q23 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993 (see Figure 4.7).

When, this was done, the model produced a good fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50cut-off indicating adequate individual item reliability (Bagozzi & Yi 1988). The fit indices showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired cut-off, 0.90 (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline

2005) (see Table 4.20). Construct reliability above the recommended level 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.21).

Table 4.21 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Peer Support Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Peer support	3.589	0.638	0.875	0.891	0.674

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.8 The *Supervisor Support* Construct

Principal component analysis with varimax rotation was conducted on the four *supervisor support* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 70.49 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loading above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.22). Therefore, no items were dropped following this stage of item testing.

Table 4.22 Supervisor Support Principal Component Analysis

Items	Factor: Supervisor Support
Q25. My supervisor/manager will support me to apply what I have learned from the training in carrying out duties.	0.90
Q26. My supervisor/manager will help me to apply what I have learned from the training in carrying out duties.	0.89
Q29. My supervisor/manager will always provide me with encouragement to practice what I have learned from the training in carrying out duties.	0.84
Q30. My supervisor/manager sets the training objective to encourage me to practice what I have learned from the training.	0.73
Number of cases	291
Eigenvalue	2.82
Percentage of Variance	70.49
Cronbach's alpha	0.86

Then, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). The Cronbach's alpha for this scale was calculated at 0.86, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for the *supervisor support* construct was constructed with the four items as depicted in Figure 4.8 below.

Figure 4.8 Measurement Model:
Supervisor Support Construct

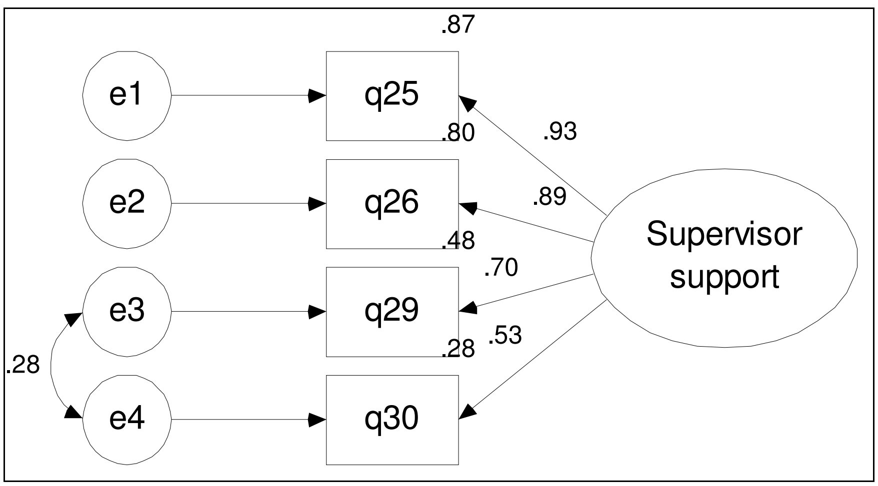


Table 4.23 Fit Indices for Supervisor Support Construct

χ^2 value	0.391	RMSR	0.003
Degrees of freedom	1	TLI	1.006
p value	0.532	CFI	1.000
GFI	0.999	NFI	0.999
AGFI	0.993	RMSEA	0.000

The $\chi 2$ statistic for the initial measurement model for the *supervisor support* construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for q29 and q30 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.8). When, this was done, the model produced a good fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50cut-off indicating adequate individual item reliability (Bagozzi & Yi 1988). The fit indices showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of: 0.10 and 0.08, respectively (Kline 2005) (see Table 4.23). Construct reliability was above the recommended 0.70 level (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.24).

Table 4.24 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Supervisor Support Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Supervisor support	3.589	0.638	0.875	0.891	0.674

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.9 The *Openness to Change* Construct

Principal component analysis with varimax rotation was conducted on the four *openness to change* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 82.11 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.25). Therefore, no items were dropped following this stage of item testing.

Table 4.25 Openness to Change Principal Component Analysis

Items	Factor: Openness to Change
Q55. Team is not ready to change.	0.89
Q56. Team is hard to accept new ideas.	0.95
Q57. Team is not ready to learn new methods.	0.94
Q58. Team with more experience will not agree with any changes to be made.	0.84
Number of cases	291
Eigenvalue	3.28
Percentage of Variance	82.11
Cronbach's alpha	0.93

Then, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). The Cronbach's alpha for this scale was calculated at 0.93, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for *openness to change* construct was constructed with the four items as depicted in Figure 4.9 below.

Figure 4.9 Measurement Model:
Openness to Change Construct

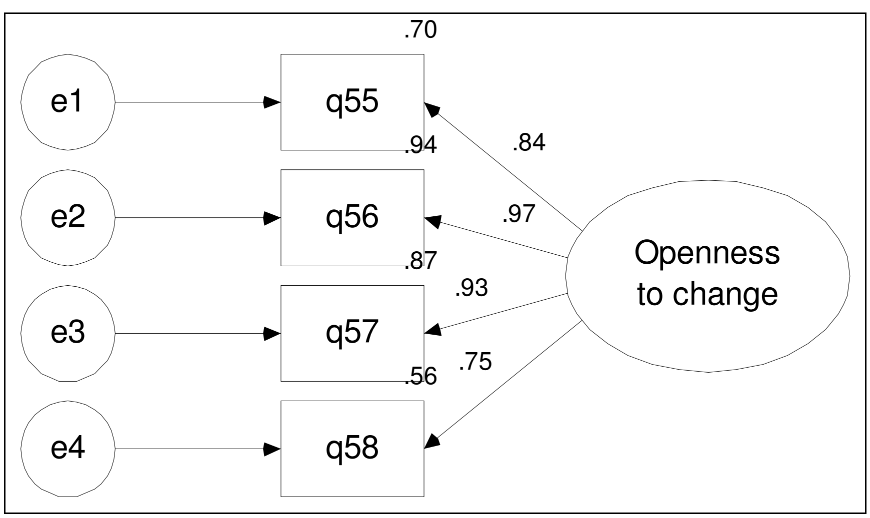


Table 4.26 Fit Indices for Openness to Change Construct

χ^2 value	5.840	RMSR	0.009
Degrees of freedom	2	TLI	0.989
p value	0.054	CFI	0.996
GFI	0.990	NFI	0.994
AGFI	0.952	RMSEA	0.081

The measurement model for the *openness to change* construct produced a good model fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988). Further, the fit indices also showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired cut-off 0.90 (Hair et al. 1998). The RMSR was below the recommended level 0.10, however, the RMSEA was slightly above the desired 0.08 cut-off (Kline 2005) (see Table 4.26). Construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.27).

Table 4.27 Descriptive Statistics, Cronbach's alpha, Construct Reliability and Variance Extracted for Openness to Change Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Openness to change	2.745	0.867	0.925	0.929	0.768

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.10 Personal Outcomes-Positive Construct

Principal component analysis with varimax rotation was conducted on the four *personal outcomes-positive* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 55.26 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.28). Therefore, no items were dropped at this stage.

Table 4.28 Personal Outcomes-Positive Principal Component Analysis

Items	Factor: Personal Outcomes-Positive
Q4. I will work with more confidence if I put into practice what I have learned from the training.	0.73
Q7. I will work with more organised if I put into practice what I have learned from the training.	0.81
Q11. My work will be rewarded if I put into practice what I have learned.	0.72
Q13. I will get a good result from the job evaluation report whenever I put into practice what I have learned from the training.	0.70
Number of cases	291
Eigenvalue	2.21
Percentage of Variance	55.26
Cronbach's alpha	0.72

Following this, reliability analysis was conducted. Results indicated that all items had item-total correlations above 0.50 except one item (Q4), which had and item-total correlation of 0.47 which was slightly below the 0.50 recommended value (Hair et al. 1998) (see Appendix J). Further inspection of the inter-item correlation matrix found that two correlations: Q4,Q11 and Q4,Q13 were 0.27 and 0.26 respectively, slightly below the recommended 0.30 cut-off (see Appendix J). However, because the Cronbach's alpha for this scale was calculated at 0.72, which was above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003), all items were retained for this scale. Then, the measurement model for *personal outcomes-positive* construct was constructed with the four items as depicted in Figure 4.10 below.

Figure 4.10 Measurement Model: Personal Outcomes-Positive Construct

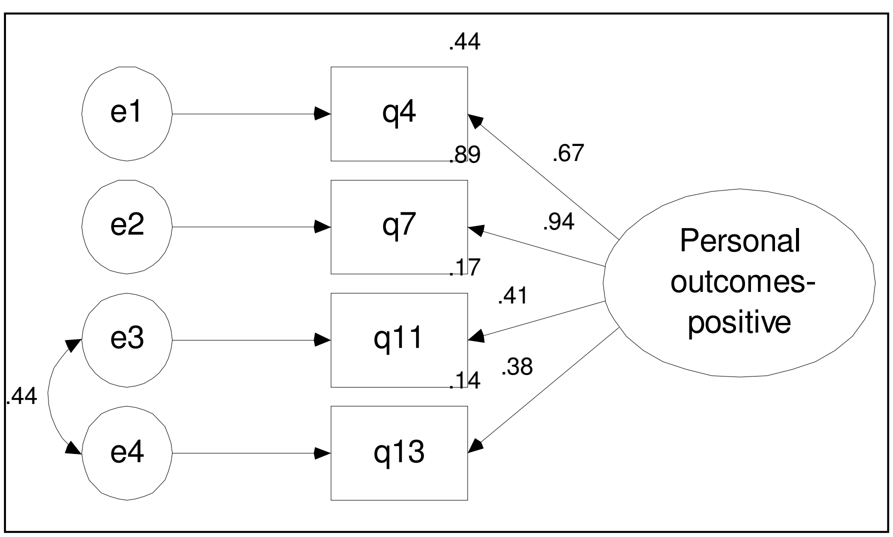


Table 4.29 Fit Indices for Personal Outcomes-Positive Construct

χ^2 value	0.119	RMSR	0.000
Degrees of freedom	1	TLI	1.018
p value	0.730	CFI	1.000
GFI	1.000	NFI	1.000
AGFI	0.998	RMSEA	0.000

The $\chi 2$ statistic for the initial measurement model for *personal outcomes-positive* was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for q11 and q13 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.10).

When, this was done, the model produced a good fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50 cut-off (Bagozzi & Yi 1988) except for two items (q11 and q13) (see Figure 4.10). However, these two items were retained because the fit indices: GFI, AGFI, NFI, TLI and CFI were all above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.29). Construct reliability was above the recommended 0.70 level (Hair et al. 1998), however, variance extracted by the construct was slightly below the recommended 0.50 cut-off due to measurement error (Fornell & Larcker 1981) (see Table 4.30). Despite the slightly lower variance extraction, principal component analysis with varimax rotation revealed that the variance extracted was 55.26 percent, clearly above the 50 percent, indicating that this construct possessed adequate reliability and validity.

Table 4.30 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Personal Outcomes-Positive Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Personal Outcomes-Positive	4.013	0.529	0.720	0.710	0.411

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.11 The *Personal Outcomes-Negative* Construct

Principal component analysis with varimax rotation was conducted on the four *personal outcomes-negative* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 62.64 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.31). Therefore, no items were dropped following this stage of item testing.

Table 4.31 Personal Outcomes-Negative Principal Component Analysis

Items	Factor: Personal Outcomes-Negative
Q14. I will be in disgraceful if I do not put into practice what I have learned from the training.	0.80
Q18. I will be seen as skeptical if I do not put into practice what I have learned from the training.	0.90
Q19. It is a waste by sending me to the training if I do not put into practice what I have learned from the training.	0.61
Q22. My job evaluation report will be jeorpardised if I do not put into practice what I have learned from the training.	0.84
Number of cases	291
Eigenvalue	2.51
Percentage of Variance	62.64
Cronbach's alpha	0.79

Following this reliability analysis was conducted with these items. Results indicated that all items had item-total correlations above 0.50 except one item (Q19), which displayed a item-total correlation of 0.41 (thus, below the recommended 0.50 cut-off)

(Hair et al. 1998) (see Appendix J). An inspection of the inter-item correlation matrix found that (Q19,Q14) displayed an inter-item correlation of 0.28, just slightly below the recommended 0.30 cut-off (Hair et al. 1998) (see Appendix J). However, because the Cronbach's alpha for this scale was at 0.79, and thus safely above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J), all items were retained for this scale.

Next, the measurement model for personal outcomes-negative construct was constructed with the four items as depicted in Figure 4.11 below.

Figure 4.11 Measurement Model:
Personal Outcomes-Negative Construct

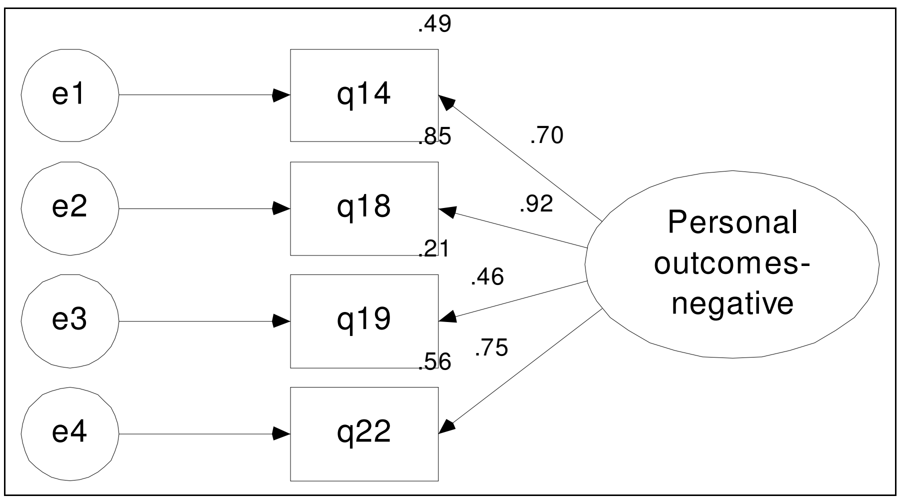


Table 4.32 Fit Indices for Personal Outcomes-Negative Construct

χ^2 value	1.844	RMSR	0.018
Degrees of freedom	2	TLI	1.001
p value	0.398	CFI	1.000
GFI	0.997	NFI	0.996
AGFI	0.984	RMSEA	0.000

The measurement model for *personal outcomes-negative* construct produced a good model fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998).

The factor loadings for all items were also above the recommended 0.50 cut-off (Bagozzi & Yi 1988) except for one item (q19) which was slightly below the desired cut-off (see Figure 4.11). Further, the fit indices also showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.32). Construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.33).

Table 4.33 Descriptive Statistics, Cronbach's alpha, Construct Reliability and Variance Extracted for Personal Outcomes-Negative Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Personal outcomes-negative	3.20	0.827	0.789	0.809	0.528

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.12 The *Supervisor Sanctions* Construct

Principal component analysis with varimax rotation was conducted on the four *supervisor sanctions* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 72.10 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loading above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.34). Therefore, no items were dropped following this stage of item testing.

Table 4.34 Supervisor Sanctions Principal Component Analysis

Items	Factor: Supervisor Sanctions
Q27. My supervisor/manager will say that the application of what I have learned from the training will not bring any benefit.	0.85
Q28. My supervisor/manager will oppose any application of technique that I have learned from the training.	0.88
Q31. My supervisor/manager will instruct me with a method that is against to what I have learned from the training.	0.85
Q32. I will be criticised by my supervisor/manager if I put into practice what I have learned from the training.	0.81
Number of cases	291
Eigenvalue	2.88
Percentage of Variance	72.10
Cronbach's alpha	0.87

Then, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). Further, the Cronbach's alpha for this scale was at 0.87, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for *supervisor sanctions* construct was constructed with the four items as depicted in Figure 4.12 below.

Figure 4.12 Measurement Model: Supervisor Sanctions Construct

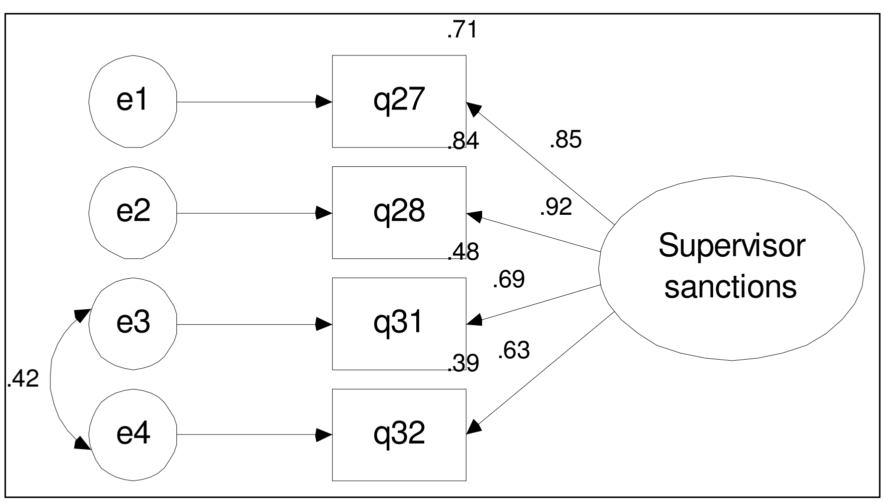


Table 4.35 Fit Indices for Supervisor Sanctions Construct

χ^2 value	0.818	RMSR	0.005
Degrees of freedom	1	TLI	1.002
p value	0.366	CFI	1.000
GFI	0.999	NFI	0.999
AGFI	0.986	RMSEA	0.000

The $\chi 2$ statistic for the initial measurement model for supervisor sanctions construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination on the modification indices showed that major improvements could be achieved if errors for q31 and q32 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.12).

When, this was done, the model produced a good fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50 cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988). The fit indices showed a good fit with GFI, AGFI, NFI, TLI and CFI above the desired cut-off 0.90 (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.35). Construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.36).

Table 4.36 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Supervisor Sanctions Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Supervisor sanctions	2.233	0.870	0.870	0.860	0.610

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.13 The *Personal Capacity for Transfer* Construct

Principal component analysis with varimax rotation was conducted on the three *personal capacity for transfer* items As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 73.32 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.37). Therefore, no items were dropped at this stage.

Table 4.37 Personal Capacity for Transfer Principal Component Analysis

Items	**Factor: Personal Capacity for Transfer**
Q15. I am capable to put into practice what I have learned from the training even though I am busy.	0.77
Q20. I have a mental capability to put into practice what I have learned from the training in carrying out duties.	0.90
Q21. I have a psychical capability to put into practice what I have learned from the training in carrying out duties.	0.89
Number of cases	291
Eigenvalue	2.20
Percentage of Variance	73.32
Cronbach's alpha	0.80

Following this test, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). Further, the Cronbach's alpha for this scale was at 0.80, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for the *personal capacity for transfer* construct was constructed with the three items as depicted in Figure 4.13 below.

Figure 4.13 Measurement Model :
Personal Capacity for Transfer Construct

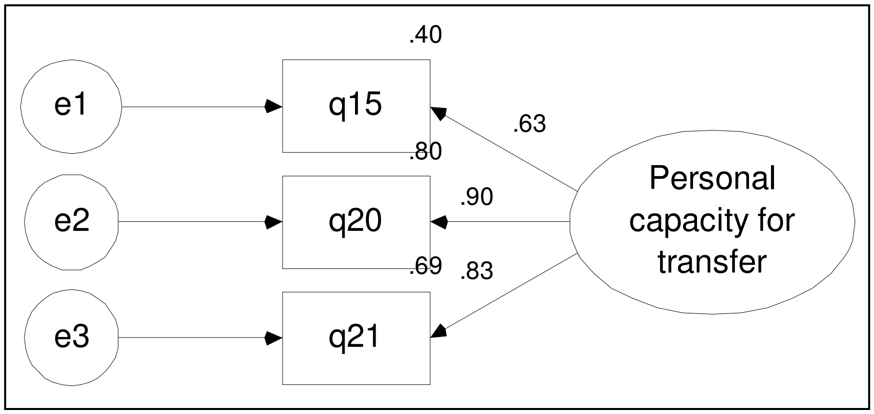


Table 4.38 Fit Indices for Personal Capacity for Transfer Construct

χ^2 value	2.420	RMSR	0.020
Degrees of freedom	1	TLI	0.988
p value	0.12	CFI	0.996
GFI	0.994	NFI	0.993
AGFI	0.967	RMSEA	0.070

The measurement model for *personal capacity for transfer* produced a good model fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loading for all items were also above the recommended 0.50cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988) (see Figure 4.13). Further, the fit indices also showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.38). Construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.39).

Table 4.39 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Personal Capacity for Transfer Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Personal capacity for transfer	4.047	0.521	0.803	0.834	0.632

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.14 The *Opportunity to Use* Construct

Principal component analysis with varimax rotation was conducted on the four *opportunity to use* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 66.67 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.40). Therefore, no items were dropped following this stage of item testing.

Table 4.40 Opportunity to Use Principal Component Analysis

Items	Factor: Opportunity to Use
Q38. My employer has given me a duty that requires practising what I have learned from the training.	0.73
Q39. My employer has allocated an enough budget for me to put into practice what I have learned from the training.	0.77
Q43. My employer has allocated the required resources for me to put into practice what I have learned from the training.	0.89
Q44. The required resources allocated by my employer are sufficient for me to put into practice what I have learned from the training.	0.87
Number of cases	291
Eigenvalue	2.67
Percentage of Variance	66.67
Cronbach's alpha	0.83

Following this test reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see

Appendix J). Further, the Cronbach's alpha for this scale was at 0.83, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for *opportunity to use* construct was constructed with the four items as depicted in Figure 4.14 below.

Figure 4.14 Measurement Model:
Opportunity to Use Construct

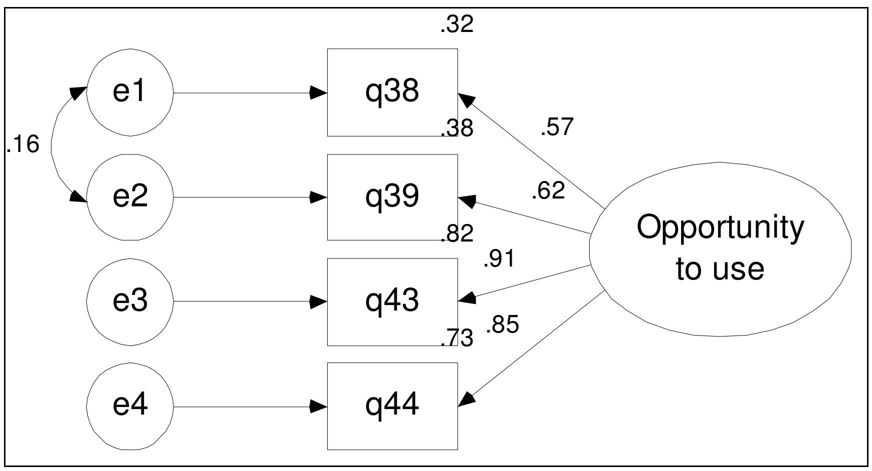


Table 4.41 Fit Indices for Opportunity to Use Construct

χ^2 value	3.546	RMSR	0.010
Degrees of freedom	1	TLI	0.969
p value	0.060	CFI	0.995
GFI	0.994	NFI	0.993
AGFI	0.940	RMSEA	0.094

The $\chi 2$ statistic for the initial measurement model for the *opportunity to use* construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for q38 and q39 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.14).

When, this was done, the model produced a good fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loading for all items were also above the recommended 0.50 cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988) (see Figure 4.14). The fit indices showed a good fit with GFI, AGFI, NFI, TLI and CFI above the desired cut-off 0.90 (Hair et al. 1998). The RMSR was below the recommended level 0.10, however, the RMSEA was slightly above the recommended 0.08 cut-off (Kline 2005) (see Table 4.41). Construct reliability was above the recommended 0.70 level (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.42).

Table 4.42 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Opportunity to Use Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Opportunity to use	3.444	0.734	0.831	0.833	0.565

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.15 The *Content Validity* Construct

Principal component analysis with varimax rotation was conducted on the five *content validity* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 57.78 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loading above the recommended cut-off 0.35 (Hair et al. 1998) (see Table 4.43). Therefore, no items were dropped at this stage.

Table 4.43 Content Validity Principal Component Analysis

Items	Factor: Content Validity
Q33. The training contents are suitable for the duties.	0.66
Q40. The training contents are related to the need of my duties.	0.83
Q41. The training contents are important to the need of my duties.	0.87
Q42. The training contents are something needed for the need of my duties.	0.87
Q45. The training contents do not fulfil the need for duties*.	0.51
Number of cases	291
Eigenvalue	2.89
Percentage of Variance	57.78
Cronbach's alpha	0.78

Note: * Negative worded item.

Then, reliability analysis was conducted with these items. Result indicated that all items had item-total correlation and inter-item correlation above the recommended cut-off 0.50 and 0.30 respectively (Hair et al. 1998) (see Appendix J). Further, the Cronbach's alpha for this scale was at 0.83, also above the recommended cut-off 0.70 (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for *content validity construct* was constructed with the five items as depicted in Figure 4.15.

Figure 4.15 Measurement Model:
Content Validity Construct

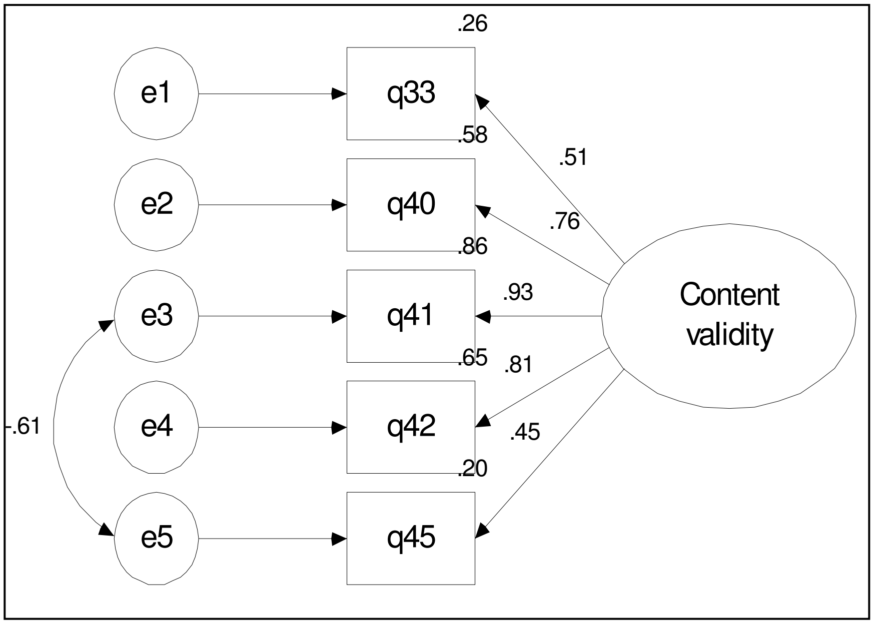


Table 4.44 Fit Indices for Content Validity Construct

χ^2 value	7.332	RMSR	0.012
Degrees of freedom	4	TLI	0.986
p value	0.119	CFI	0.994
GFI	0.990	NFI	0.988
AGFI	0.963	RMSEA	0.054

The $\chi 2$ statistic for the initial measurement model for *content validity* construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for q41 and q45 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.15).

When, this was done, the model produced a good fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loading for all items also above the recommended cut-off 0.50 (Bagozzi & Yi 1988) except for one item (q45), slightly below the recommended cut-off 0.50 (see Figure 4.15). However, this item was retained because the fit indices showed a good fit with GFI, AGFI, NFI, TLI and CFI above the desired cut-off 0.90 (Hair et al. 1998). The RMSR and RMSEA below the recommended level 0.10 and 0.08 respectively (Kline 2005) (see Table 4.44). The construct reliability above the recommended level 0.70 (Hair et al. 1998) and variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.45).

Table 4.45 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Content Validity Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Content Validity	4.029	0.567	0.783	0.831	0.512

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.16 The *Transfer Design* Construct

Principal component analysis with varimax rotation was conducted on the four *transfer design* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 70.62 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loading above the recommended cut-off 0.35 (Hair et al. 1998) (see Table 4.46). Therefore, no items were dropped at this stage.

Table 4.46 Transfer Design Principal Component Analysis

Items	Factor: Transfer Design
Q34. The training has been delivered systematically.	0.77
Q35. The training has been delivered effectively.	0.90
Q36. The training has been delivered in a straightforward approach.	0.87
Q37. The training has been delivered by using examples that correspond with the need for duties.	0.81
Number of cases	291
Eigenvalue	2.83
Percentage of Variance	70.62
Cronbach's alpha	0.86

Then, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). Further, the Cronbach's alpha for this scale was at 0.86, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003). Therefore, all items were retained for this scale.

Next, the measurement model for transfer design construct was constructed with the four items as depicted in Figure 4.16 below.

Figure 4.16 Measurement Model:
Transfer Design Construct

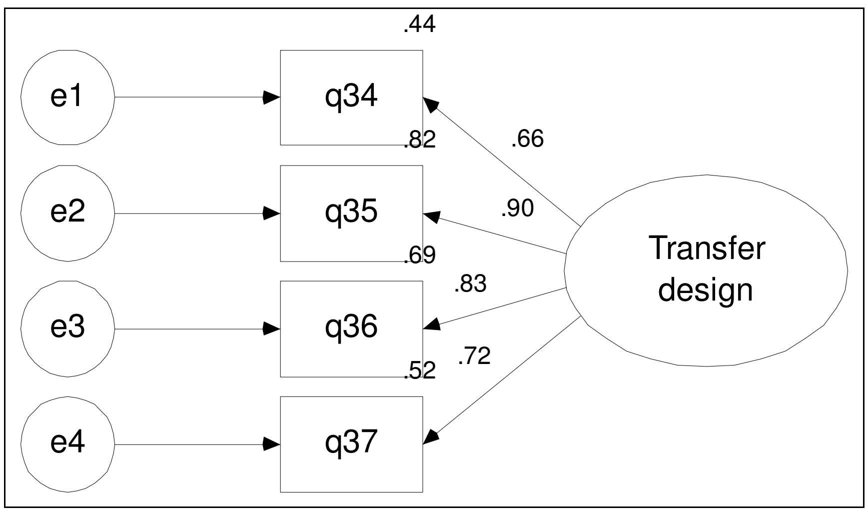


Table 4.47 Fit Indices for Transfer Design Construct

χ^2 value	1.649	RMSR	0.003
Degrees of freedom	2	TLI	1.002
P value	0.438	CFI	1.000
GFI	0.997	NFI	0.997
AGFI	0.986	RMSEA	0.000

The measurement model for transfer design construct produced a good model fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al 1998). The factor loadings for all items were also above the recommended 0.50 cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988) (see Figure 4.16). Further, the fit indices also showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.47). Construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.48).

Table 4.48 Descriptive Statistics, Cronbach's alpha, Construct Reliability and Variance Extracted for Transfer Design Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Transfer design	4.172	0.489	0.857	0.862	0.613

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.17 The *Sharing Behaviour* Construct

Principal component analysis with varimax rotation was conducted on the five *sharing behaviour* items. As expected, only one factor was extracted (eigenvalue above 1) which accounted for approximately 53.81 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) except one item (Q87), which had a factor loading of 0.14. An inspection found that, this item was a negative worded item and it performed poorly due to its poor wording (see Appendix F for the negative worded item). Thus, it was decided to drop Q87 and the program was re-run. Results indicated that, the percentage of variance increased to 66.95 percent as depicted in Table 4.49 below.

Table 4.49 Sharing Behaviour Principal Component Analysis

Items	Factor: Sharing Behaviour
Q81. I always being invited to share knowledge and skills that have been learned from the training into the workplace.	0.76
Q82. I always discuss with my colleague regarding knowledge and skills that have been learned from the training into the workplace.	0.87
Q83. I always share knowledge and skills that have been learned from the training.	0.84
Q84. I share knowledge and skills that have been learned from the training into the workplace in the past.	0.80
Number of cases	291
Eigenvalue	2.68
Percentage of Variance	66.95
Cronbach’s alpha	0.83

Following this test, a reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). Further, the Cronbach’s alpha for this scale was at 0.83, also above the 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, the remaining four items were retained for this scale.

Next, the measurement model for sharing behaviour construct was constructed with the four items as depicted in Figure 4.17 below.

Figure 4.17 Measurement Model:
Sharing Behaviour Construct

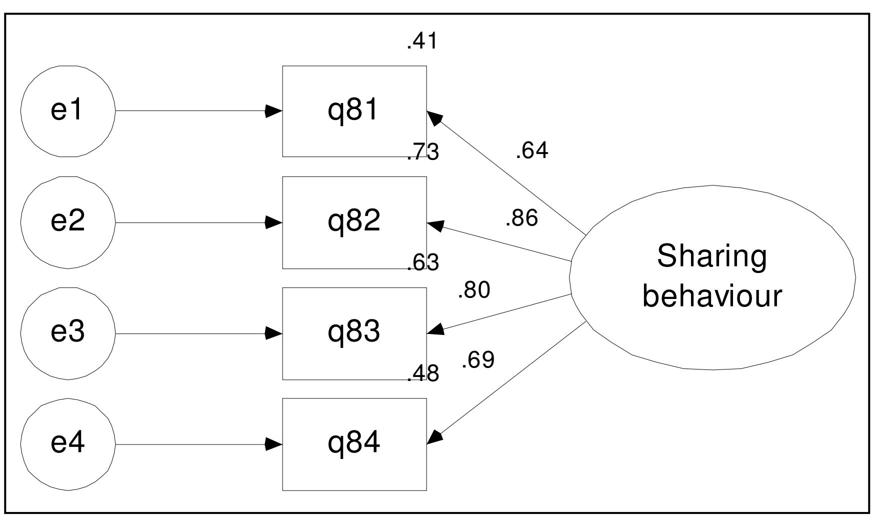


Table 4.50 Fit Indices for Sharing Behaviour Construct

χ^2 value	5.728	RMSR	0.010
Degrees of freedom	2	TLI	0.975
p value	0.057	CFI	0.992
GFI	0.991	NFI	0.987
AGFI	0.953	RMSEA	0.080

The measurement model for the *sharing behaviour* construct produced a good model fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loading for all items were also above the recommended 0.50 cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988) (see Figure 4.17). Further, the fit indices also showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR was below the recommended level 0.10 while RMSEA was on the margin of the recommended level 0.08 (Kline 2005) (see Table 4.50). Construct reliability was above the recommended 0.70 level (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.51).

Table 4.51 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Sharing Behaviour Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Sharing behaviour	3.944	0.583	0.826	0.837	0.566

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.18 The *Intention to Share* Construct

Principal component analysis with varimax rotation was conducted on the four *intention to share* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 70.36 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998).

Further, all items had factor loadings above the recommended cut-off 0.35 (Hair et al. 1998) (see Table 4.52). Therefore, no items were dropped at this stage.

Table 4.52 Intention to Share Principal Component Analysis

Items	Factor 1: Intention to Share
Q79. I will try to share knowledge and skills that have been learned from the training into the workplace.	0.79
Q80. I plan to share knowledge and skills that have been learned from the training into the workplace.	0.85
Q85. I hope to share knowledge and skills that have been learned from the training into the workplace.	0.85
Q86. I decide to share knowledge and skills that have been learned from the training into the workplace.	0.86
Number of cases	291
Eigenvalue	2.81
Percentage of Variance	70.36
Cronbach's alpha	0.86

Following this, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). Further, the Cronbach's alpha for this scale was at 0.86, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for intention to share construct was constructed with the four items as depicted in Figure 4.18 below.

Figure 4.18 Measurement Model:
Intention to Share Construct

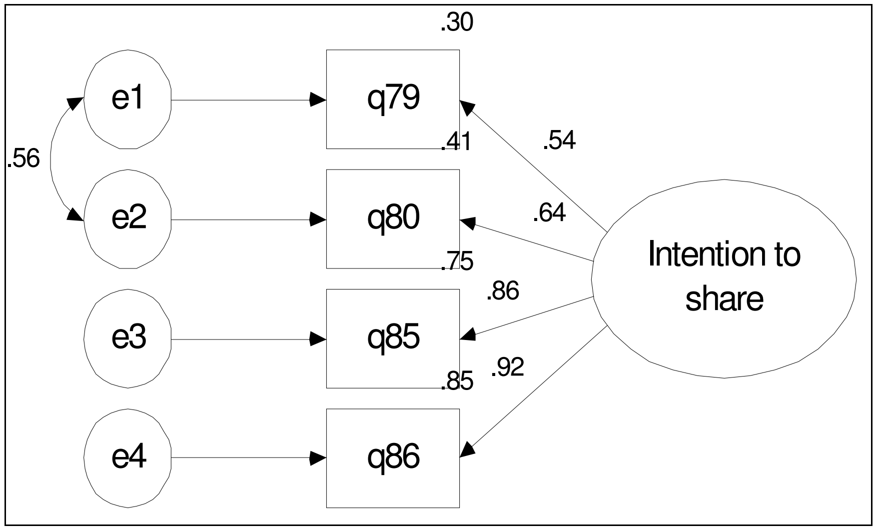


Table 4.53 Fit Indices for Intention to Share Construct

χ^2 value	1.662	RMSR	0.002
Degrees of freedom	1	TLI	0.994
p value	0.197	CFI	0.999
GFI	0.997	NFI	0.997
AGFI	0.972	RMSEA	0.048

The $\chi 2$ statistic for the initial measurement model for content validity was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for q79 and q80 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.18).

When, this was done, the model produced an acceptable fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50 cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988) (see Figure 4.18). The fit indices also showed a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al.

1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.53). Construct reliability was above the recommended 0.70 level (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.54).

Table 4.54 Descriptive Statistics, Cronbach's alpha, Construct Reliability and Variance Extracted for Intention to Share Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Intention to share	4.165	0.459	0.859	0.836	0.572

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.19 The *Attitude Toward Knowledge Sharing* Construct

Principal component analysis with varimax rotation was conducted on the five *attitude toward knowledge sharing* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 65.02 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998). It was found that one item (Q74) had a factor loading of 0.39, and thus was above the desired cut-off. However, its loading was not consistent with the loading of other items (Q67,0.89; Q68,0.92; Q69,0.91; Q72,0.80). An inspection found that this item (Q74) was another negatively worded item and it performed poorly due to its poor wording (see Appendix F for the negative worded item). Thus, it was decided to drop Q74 and the program was re-run. Results indicated that the percentage of variance increased to approximately 78.57 percent as depicted in Table 4.55 below.

Table 4.55 Attitude Toward Knowledge Sharing Principle Component Analysis

Items	Factor: Attitude Toward Knowledge Sharing
Q67. Sharing of knowledge and skills that have been learned during training are good.	0.90
Q68. Sharing of knowledge and skills that have been learned during training can improve job performance.	0.93
Q69. Sharing of knowledge and skills that have been learned during training can bring benefits.	0.91
Q72. Sharing of knowledge and skills that have been learned during training are advantageous.	0.80
Number of cases	291
Eigenvalue	3.14
Percentage of Variance	78.57
Cronbach's alpha	0.91

Following this, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). Further, the Cronbach's alpha for this scale was at 0.91, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, the remaining four items were retained for this scale.

Next, the measurement model for the *attitude toward knowledge sharing* construct was constructed with the four items as depicted in Figure 4.19 below.

Figure 4.19 Measurement Model:
Attitude Toward Knowledge Sharing Construct

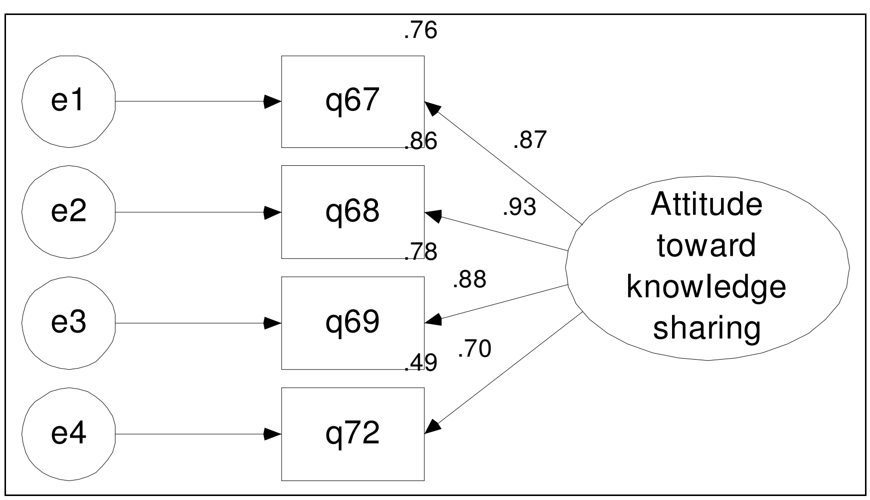


Table 4.56 Fit Indices for Attitude Toward Knowledge Sharing Construct

χ^2 value	4.175	RMSR	0.004
Degrees of freedom	2	TLI	0.992
p value	0.124	CFI	0.997
GFI	0.993	NFI	0.995
AGFI	0.964	RMSEA	0.061

The measurement model for *attitude toward knowledge sharing* construct produced a good model fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50 cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988) (see Figure 4.19). Further, the fit indices also showed support for a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR was below the recommended level 0.10 while RMSEA just reached the recommended level 0.08 (Kline 2005) (see Table 4.56). Construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.57).

Table 4.57 Descriptive Statistics, Cronbach's alpha, Construct Reliability and Variance Extracted for Attitude Toward Knowledge Sharing Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Attitude toward knowledge sharing	4.365	0.498	0.908	0.911	0.722

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.20 The *Subjective Norm Toward Knowledge Sharing* Construct

Principal component analysis with varimax rotation was conducted on the four *subjective norm toward knowledge sharing* items. As expected, only one factor was extracted (eigenvalue above 1), which accounted for approximately 62.99 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.58). Therefore, no items were dropped at this stage.

Table 4.58 Subjective Norm Toward Knowledge Sharing Principal Component Analysis

Items	Factor 1: Subjective Norm Toward Knowledge Sharing
Q70. My supervisor/manager thinks that I should share knowledge and skills that have been learned from the training into the workplace.	0.88
Q71. My head department thinks that I should share knowledge and skills that have been learned from the training into the workplace.	0.85
Q73. Those who are closed to me think that I should share knowledge and skills that have been learned from the training into the workplace.	0.80
Q75. Those who are of the same mind with me think that I should share knowledge and skills that have been learned from the training into the workplace.	0.62
Number of cases	291
Eigenvalue	2.52
Percentage of Variance	62.99
Cronbach's alpha	0.79

Following this, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998). Only one item formed the exception: (Q75). This item had an item-total correlation of 0.43, slightly below the recommended 0.50 cut-off (see Appendix J). However, it was decided to retain this item because the Cronbach's alpha for this scale was 0.79, and thus above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J).

Next, the measurement model for *subjective norm toward knowledge sharing* construct was constructed with the four items as depicted in Figure 4.20 below.

Figure 4.20 Measurement Model:
Subjective Norm Toward Knowledge Sharing Construct

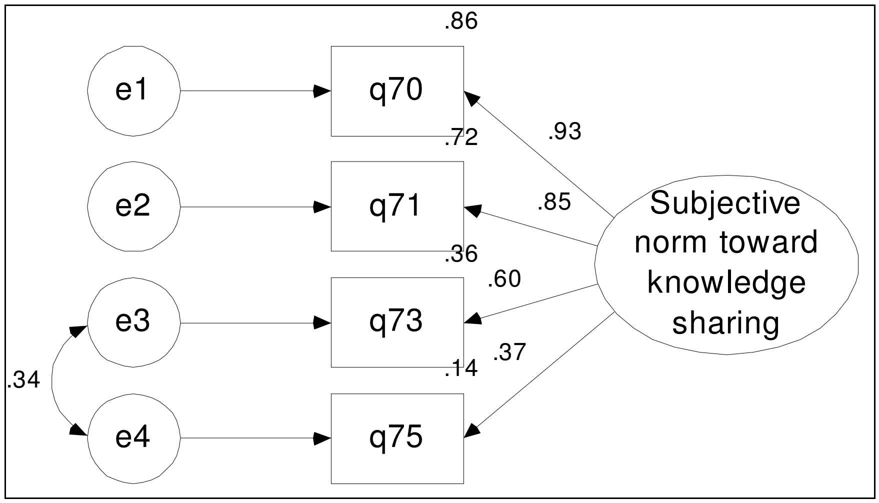


Table 4.59 Fit Indices for Subjective Norm Toward Knowledge Sharing Construct

χ^2 value	0.665	RMSR	0.004
Degrees of freedom	1	TLI	1.004
p value	0.415	CFI	1.000
GFI	0.999	NFI	0.999
AGFI	0.989	RMSEA	0.000

The $\chi 2$ statistic for the initial measurement model for the *subjective norm toward knowledge sharing* construct was significant (p=0.000), indicating that the model did not adequately account for the observed covariation among the items (Hair et al. 1998). Examination of the modification indices showed that major improvements could be achieved if errors for q73 and q75 were allowed to correlate (Arbuckle & Wothe 1999; Joreskog & Sorbom 1993) (see Figure 4.20).

When, this was done, the model produced an acceptable fit to the data with a non-significant $\chi 2$ statistic (p>0.05), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50 cut-off (Bagozzi & Yi 1988) except for one item (q75), which had a factor loading of 0.37 (see Figure 4.20). However, this item was retained because it showed a good fit with GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended level 0.10 and 0.08 respectively (Kline 2005) (see Table 4.59). The construct reliability above the recommended level 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.60).

Table 4.60 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Subjective Norm Toward Knowledge Sharing Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Subjective norm toward knowledge sharing	3.979	0.599	0.793	0.798	0.521

Note: See Appendix K for construct reliability and variance extracted workings.

4.2.21 The *Perceived Behavioural Control* Construct

Principal component analysis with varimax rotation was conducted on the three *perceived behavioural control toward knowledge sharing* items. As expected, only one factor was extracted (eigenvalue above 1) which accounted for approximately 69.45 percent of the variance, confirming the unidimensionality of this construct (De Vellis 2003; Hair et al. 1998). Further, all items had factor loadings above the recommended 0.35 cut-off (Hair et al. 1998) (see Table 4.61). Therefore, no items were dropped at this stage.

Table 4.61 Perceived Behavioural Control Toward Knowledge Sharing Principal Component Analysis

Items	Factor: Perceived Behavioural Control Toward Knowledge Sharing
Q76. I can share knowledge and skills that have been learned from the training into the workplace without any enforcement.	0.81
Q77. I can share knowledge and skills that have been learned from the training into the workplace at any time.	0.89
Q78. I can still share knowledge and skills that have been learned from the training into the workplace even though I am busy.	0.80
Number of cases	291
Eigenvalue	2.08
Percentage of Variance	69.45
Cronbach's alpha	0.77

Following this, reliability analysis was conducted with these items. Results indicated that all items had item-total correlations and inter-item correlations above the recommended cut-offs: 0.50 and 0.30, respectively (Hair et al. 1998) (see Appendix J). Further, the Cronbach's alpha for this scale was at 0.77, also above the recommended 0.70 cut-off (Carmines & Zeller 1979; De Vellis 2003) (see Appendix J). Therefore, all items were retained for this scale.

Next, the measurement model for *perceived behavioural control toward knowledge sharing* construct was constructed with the three items as depicted in Figure 4.21 below.

Figure 4.21 Measurement Model:
Perceived Behavioural Control Toward Knowledge Sharing Construct

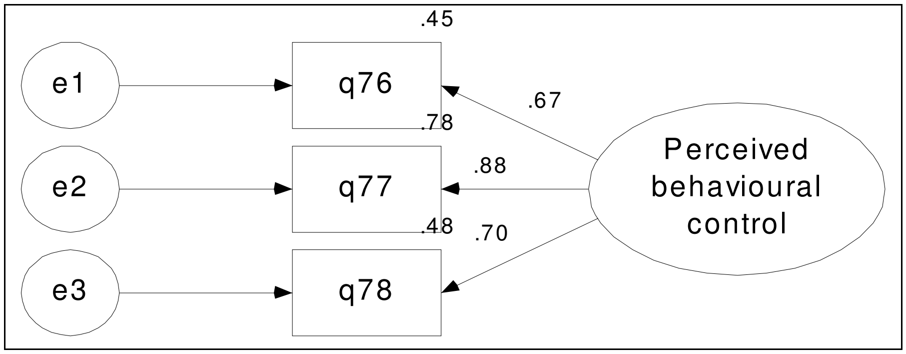


Table 4.62 Fit Indices for Perceived Behavioural Control Toward Knowledge Sharing Construct

χ^2 value	2.686	RMSR	0.019
Degrees of freedom	1	TLI	0.980
p value	0.101	CFI	0.993
GFI	0.994	NFI	0.990
AGFI	0.963	RMSEA	0.076

The measurement model for perceived behavioural control toward knowledge sharing produced a good model fit to the data with a non-significant $\chi 2$ statistic ($p>0.05$), indicating that the actual and predicted input matrices were not statistically different (Hair et al. 1998). The factor loadings for all items were also above the recommended 0.50 cut-off, indicating adequate individual item reliability (Bagozzi & Yi 1988) (see Figure 4.21). Further, the fit indices showed support for a good fit with GFI, AGFI, NFI, TLI and CFI all above the desired 0.90 cut-off (Hair et al. 1998). The RMSR and RMSEA were below the recommended levels of 0.10 and 0.08, respectively (Kline 2005) (see Table 4.62). Construct reliability was above the recommended level of 0.70 (Hair et al. 1998) and the variance extracted by the construct was larger than the variance extracted due to measurement error (above 0.50), providing support for reliability and validity of this construct (Fornell & Larcker 1981) (see Table 4.63).

Table 4.63 Descriptive Statistics, Cronbach's Alpha, Construct Reliability and Variance Extracted for Perceived Behavioural Control Toward Knowledge Sharing Construct

Construct	Mean	Standard Deviation (δ)	Cronbach's Alpha (α)	Construct Reliability	Variance Extracted
Perceived behavioural control toward knowledge sharing	4.095	0.547	0.771	0.797	0.571

Note: See Appendix K for construct reliability and variance extracted workings.

4.3 Discussion

This chapter described the assessment of validity and reliability for each construct in this study using exploratory factor analysis (principal component analysis), confirmatory factor analysis (structural equation modelling) and Cronbach's alpha. In exploratory factor analysis, principal component analysis with varimax rotation indicated that all constructs under examination extracted only one factor (eigenvalue above 1), confirming the unidimensionality of all constructs under study. The variance extracted by all constructs ranged from 55.26 percent to 82.11 percent. The *personal-outcomes positive* construct recorded the lowest while *openness to change* recorded the highest variance. According to Hinkin (1995), it is important that the scale used for construct measurement generates sufficient variance for statistical analysis. In this thesis, a five-point Likert-type scale that ranged from '1=Strongly Disagree' to '5=Strongly Agree' was utilised. As the variance extracted by all constructs were above 50 percent, this implies the suitability of this type of scale to demonstrate higher variance when applied in the context of this study.

The Cronbach's alpha reliabilities for all constructs were above the desired cut off 0.70, and ranged from 0.72 to 0.93. Only two constructs displayed Cronbach's alpha reliabilities slightly above the desired cut off 0.70 while others above 0.80. The two constructs were *personal outcomes-positive* (0.72) and *learner readiness* (0.73). The Cronbach's alphas for these constructs were lower than other constructs because several items in these constructs were not consistent in measuring what they suppose to measure due to poor wordings. For example, two items belonged to *learner readiness* construct: *'I know that this training is good for me'* and *'I applied for this training on my own'* were not consistent with the other three items for the construct. A similar problem occurred for the *personal outcomes-positive* construct. Two of the items: *'My work will be rewarded if I put into practice what I have learned' and 'I will get a good result from the job evaluation report whenever I put into practice what I have learned from the training'* were not consistent with the other two items for the construct. These problematic items were retained in this thesis because the overall Cronbach's alpha for the constructs were above the desired cut-off 0.70. However, future research should replace these items in order to improve the consistency reliability of the scales.

Further, three negative worded items also performed poorly. The three negative worded items belonged to the constructs: *transfer effort-performance expectations*, *attitude toward knowledge sharing and sharing behaviour*. In this thesis, the researcher used negative worded items in order to avoid agreement bias (Churchill 1979; De Vellis 2003; Spector 1992). However, it was found that the items created confusion for the respondents instead of attempting to avoid agreement bias. In this thesis, the researcher had no choice but to drop the three items in order to increase the reliability and validity of the three constructs. In the transfer of training literature, two studies were found using negative worded items and reported similar problems as occurred in this thesis (Chiaburu & Marinova 2005; Holton et al. 2000). Not surprisingly, several researchers opposed the use of negative worded items suggesting that they may introduce confusion rather than precision (Jackson, Wall, Martin & Davids 1993). Although the guidelines are available for the wording of negative worded items (De Vellis 2003), the researcher found that it was not as easy as suggested. Therefore, an important lesson learned in this thesis is to take particular care in properly wording negative items and to test them using different samples to see how they perform before they can be accepted and used.

Also important to highlight in the discussion is the number of items for each construct. In this thesis, the number of items ranged from three to five. Two constructs had three items each; 14 constructs had four items each; and five constructs had five items. Although Hinkin (1995) suggested five or six items for each construct to provide adequate internal consistency reliability, the researcher found that three items for each construct proved sufficient. Several other researchers had also suggested that a measure should have at least three items for content adequacy (Cook et al. 1989). In this thesis, the two constructs having three items showed good internal consistency reliability where the Cronbach's alpha were 0.80 (*personal capacity for transfer*) and 0.77 (*perceived behavioural control toward knowledge sharing*), both above the desired cut-off 0.70 (De Vellis 2003). Moreover, the researcher felt that having more than three items for each construct would make the questionnaire lengthy and could then be difficult to obtain co-operation from the respondents. The researcher encountered this experience during the data collection. The questionnaire comprised 87 items in total. Most respondents expressed concern about the length of the questionnaire and they took about 30 to 40 minutes to complete it. The researcher also received about 67 incomplete questionnaires (more than one page incomplete). Arguably, if three good items were used for each construct, the length of the questionnaire could have been reduced to 63 items and consequently less time would have been taken by respondents to answer the questionnaire. Perhaps then, the number of incomplete questionnaire could also have been reduced.

The use of confirmatory factor analysis in this thesis is to filter the best items that can represent the constructs under study (Chin 1988). Because some items were allowed to correlate, construct assessment in this chapter should be regarded as exploratory rather than confirmatory (Chin 1998; Hurley et al. 1997). In this thesis, several items belonging to 12 constructs were allowed to correlate. One example is the *performance-self efficacy* construct. Two items belong to this construct were allowed to correlate due to item redundancy. The two items were: *'I am confident to increase my job performance'* and *'I have the capabilities to increase my job performance'*.

These two items were redundant and therefore errors for these items were allowed to correlate. When errors for these items were correlated, the construct reliability and variance extracted for *performance-self efficacy* construct improved.

The variance extracted by all constructs was also above the desired 0.50 cut-off, except for three constructs: *learner readiness* (0.455), *performance-outcomes expectations* (0.478) and *personal outcomes-positive* (0.411) constructs. Each of these constructs emerged slightly below the desired 0.50 cut-off but principle component analysis with varimax rotation revealed that the variance extracted were 55.36 percent, 61.46 percent and 55.26 percent respectively, clearly above the 50 percent. The construct reliability for these constructs were also above the desired cut-off 0.70, indicating that despite the slightly lower variance extractions, these constructs possessed adequate reliability and validity.

Overall, the researcher was satisfied that all measures possessed good psychometric properties (validity and reliability) to investigate the relationships hypothesised in this thesis. As described above, in exploratory factor analysis, principal component analysis with varimax rotation indicated that all constructs under examination extracted only one factor (eigenvalue above 1), confirming the unidimensionality of all constructs under study. The Cronbach's alphas for all constructs above the desired cut-off 0.70. In confirmatory factor analysis, by exception of *learner readiness, performance-outcomes expectations* and *personal outcomes-positive*, all constructs above the desired cut-off 0.70 and 0.50 for construct reliability and variance extracted respectively.

4.4 Summary

This chapter continued the discussion on methodology (Chapter 3) through a presentation of the results of construct assessment using the techniques of exploratory factor analysis (principal component analysis), confirmatory factor analysis (structural equation modelling) and Cronbach's alpha. A total of 21 constructs were tested for this study of which three items were rejected. The rejected items were all negatively worded questions. Their removal significantly increased the validity and reliability of the constructs under investigation. The chapter confirms that all constructs actually measure what they intended to measure and all display good psychometric properties (validity and reliability) at this point of study to investigate the relationships hypothesised in this thesis. Chapter 5 moves to a detailed discussion of the hypotheses testing of the 10 hypotheses driving this study along with the results and their implications for transfer of training.

CHAPTER 5

HYPOTHESIS TESTING:
RESULTS AND DISCUSSION

5.1 Introduction

Chapter 3 described the research framework and the methodology chosen to examine the relationships hypothesised. Then, Chapter 4 continued the methodological discussion through an examination of tests conducted to ensure the reliability and validity of all constructs under study. Chapter 4 detailed the use of exploratory factor analysis (principal component analysis), Cronbach's alpha and confirmatory factor analysis (structural equation modelling) for each construct used in the survey instrument. Chapters 5 and 6 discuss the findings from the research questions and related hypotheses. This Chapter considers in detail the findings from research questions one and two. The Chapter commences with an overview of the types of respondents to the survey before moving to test the relevant hypotheses.

5.2 Distribution of Respondents

Before describing hypothesis testing and presenting the results, it is useful to consider the distribution of respondents by training types, gender, age, education level, work experience and position of employment. This demographic data assists in better understanding the types of trainees in the Malaysian public sector and from that, the phenomenon of transfer of training at the level of the individual trainee. This information is presented below.

5.2.1 Distribution of Respondents by Training Types

As discussed in Chapter 2, transfer of training research has been quite sparse in Malaysia despite increasing pressure on the public sector to deliver a return on investment in terms of improved training transfer and to better link training to improvements in job performance. To assist in rectifying this research gap, a cross sectional study of the Malaysian public sector was used in this thesis with a survey questionnaire as the main instrument for data collection. The sample chosen consisted of government employees attending training at the National Institute of Public Administration, a central training organisation for government employees in Malaysia. Data were collected from respondents who had attended three types of training: general training (for example, quality report writing), management/leadership training (for example, human resource management) and computer training (for example, visual basic). Appendix E provides further details of the training types. Table 5.1 below presents the distribution of respondents by training types.

Table 5.1 Distribution of Respondents by Training Types

Training Types	n	Percent
General Training	180	61.9
Management/Leadership Training	71	24.4
Computer Training	40	13.7
Total	291	100

From Table 5.1, it can be seen that most respondents attended general training (61.9 percent) with 24.4 percent of respondents attending management/leadership training. Only 13.7 percent of respondents had attended computer training.

5.2.2 Distribution of Respondents by Gender

The information regarding gender indicated that male and female respondents were almost equally distributed. Table 5.2 below presents the distribution of respondents by gender.

Table 5.2 Distribution of Respondents by Gender

Gender	n	Percent
Male	152	52.2
Female	139	47.8
Total	291	100

5.2.3 Distribution of Respondents by Age

The information regarding respondents' ages indicated that most who attended training were 30 years of age or below (49.5 percent). This was followed by respondents in the age bracket between 31 and 40 years (30.6 percent). Senior respondents aged 41 and above, represented the lowest group of trainees (19.9 percent). Table 5.3 below presents the distribution of respondents by age.

Table 5.3 Distribution of Respondents by Age

Age	N	Percent
30 years and below	144	49.5
Between 31 and 40 years	89	30.6
41 years and above	58	19.9
Total	291	100

5.2.4 Distribution of Respondents by Level of Education

The information regarding respondents' levels of education indicated that those who held a bachelor degree and those who had less than a bachelor degree were almost equally distributed. Table 5.4 below presents the distribution of respondents by their level of education.

Table 5.4 Distribution of Respondents by Level of Education

Level of Education	n	Percent
Less than Bachelor Degree	137	47.1
Bachelor Degree and above	154	52.9
Total	291	100

5.2.5 Distribution of Respondents by Work Experience

The information regarding respondents work experience indicated that most had work experience of less than 5 years (43.7 percent). This was followed by respondents who had more than 10 years work experience (33.3 percent). Respondents who had work experience between 5 to 10 years recorded the lowest attendance (23 percent). Table 5.5 below presents the distribution of respondents by their work experience.

Table 5.5 Distribution of Respondents by Work Experience

Work Experience	n	Percent
Less than 5 years	127	43.7
Between 5 to 10 years	67	23.0
Above 10 years	97	33.3
Total	291	100

5.2.6 Distribution of Respondents by Position of Employment

The information regarding respondents' positions of employment indicated that those from support groups and management groups were almost equally distributed. Table 5.6 below presents the distribution of respondents by their position of employment.

Table 5.6 Distribution of Respondents by Position of Employment

Status of Employment	n	Percent
Management Group	147	50.5
Support Group	144	49.5
Total	291	100

This section overviewed the types of respondents and the training undertaken in this study. In general, almost equal numbers of men and women participated in a range of training dominated by general training. There were also roughly equal numbers of respondents who occupied either support positions or managerial positions and this is likely reflected in the fact that approximately equal numbers of degree qualified and less than degree qualified individuals participated in the survey. Training attendance was prevalent amongst trainees with less than 5 years of work experience.

The researcher believes that, it would be more instructive to have compared the demographics of the sample with the demographics of the population from which it was drawn. However, the data regarding the demographics of the population (by gender; age; level of education; work experience; position of employment) from which it was drawn was not obtained from the training provider. The researcher found that, although the registration process at the training centre has been computerised, however, demographics data by gender; age; level of education; work experience and position of employment cannot be sorted by the system at the training centre.

5.3 Hypothesis Testing

In Chapter 1, six research questions were introduced which formed the basis of the enquiry into transfer of training in a Malaysian public sector context. A total of 10 hypotheses were then constructed to assist in answering the research questions. In this Chapter, Hypothesis 1 (H1) and Hypothesis 2 (H2) belonging to research questions one and two respectively are tested and the results are presented below.

5.3.1 Hypothesis Testing for Research Question One

Research Question one asked:

Which of these transfer of training variables:

- *motivation to transfer*;
- secondary influences (*performance-self efficacy, learner readiness*);
- expected utility (*transfer effort-performance expectations, performance-outcomes expectations*);
- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*);
- enabling (*content validity, transfer design*); and
- TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing)* are significantly different in terms of their mean score across different training types (general training, management/leadership training, computer training)?

One hypothesis was developed to answer research question one:

Hypothesis 1 (H1):

The following transfer of training variables: *motivation to transfer*; secondary influences (*performance-self efficacy*, *learner readiness*); expected utility (*transfer effort-performance expectations*, *performance-outcomes expectations*); transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*); ability (*personal capacity for transfer, opportunity to use*); enabling (*content validity, transfer design*) and TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean scores across different training types (general training, management/leadership training, computer training).

H1 Testing:

As described in the methodology chapter (Chapter 3), MANOVA was selected to test H1. The 21 variables listed above were used as the dependent variables while the training types (general training, management/leadership training, computer training) were used as independent variables (Coakes & Steed 2003; Pallant 2005). The ratio of the largest group (general training) to the smallest group (computer training) was 4.5 (180 ÷ 40). According to Hair et al. (1998), if the ratio of the largest group to the smallest group is more than 1.5, then a test for equality of covariance (Box's Test) is needed. The Box's Test significant value should be larger than 0.001 (non significant difference) to indicate the equality of covariance across groups, in this case general training, management/leadership training and computer training (Coakes & Steed 2003; Pallant 2005). In the present study, Box's Test showed a significant difference ($p = 0.000$). However, because Box's Test is not a robust test (Harris 1985; Yamnill

2001), it was decided to run MANOVA and the results were interpreted as described below.

The results of the multivariate test showed a statistically significance difference. The Wilk's Lambda was significant at the 0.000 level (Wilks' Lambda = 0.708; F = 2.405) indicating that there were significant differences among the variables in terms of their means across the three different training types. Then, the test of between-subject effect output box was checked in order to identify which variables differed. The results indicated that of the 21 variables, two were significantly different ($p < 0.002$) across the three training types. These two variables were *feedback* and *supervisor sanctions*, both transfer climate variables (see Appendix L1). The Levene's test of equality of error variances showed that *feedback* ($p = 0.014$) and *supervisor sanctions* ($p = 0.307$) were not significant, indicating that these two variables did not violate the assumption of homogeneity of variance.

Further examination on the mean scores of the two variables that differed, found that the respondents from computer training rated higher than the respondents from general training and management/leadership training on *feedback* scale (M = 3.969 versus 3.857 and 3.592 respectively) and *supervisor sanctions* scale (M = 2.856 versus 2.113 and 2.187 respectively). **Therefore, H1 was supported for these two variables.**

5.3.2 The relationship between the transfer of training variables and the type of training undertaken

The findings for the first research question revealed that only two variables were significantly different across the three training types. The two variables were *feedback* and *supervisor sanctions*. Both are transfer climate variables and they are considered below:

The Effect of Feedback

Feedback was found to be significantly different across the three types of training. Trainees from computer training rated *feedback* higher than trainees from general and management/leadership training (M = 3.969 versus 3.857 and 3.592 respectively). As described in Chapter 1, *feedback* represents the formal and informal indicators from an organisation about an individual's job performance. The results suggest that trainees from computer training are more likely to receive *feedback* regarding their job performance than trainees from general and management/leadership training. However, the fact that the overall mean score across the three training types was 3.808, indicates that *feedback* is at best operating at a moderate level only. Supervisors and managers in the Malaysian public sector need to provide greater *feedback* to trainees regarding their job performance as a result of attending training if they want to see transfer of training occur. This has also been observed in a range of studies finding that an individual's performance will be further enhanced if *feedback* on job performance is provided (Clarke 2002; Reber & Wallin 1984; Tracey et al. 1995) (see also Chapter 3, section 2.5.1)

It is likely that providing trainees with *feedback* could motivate them to transfer training to the job. Chapter 1 defined motivation to transfer as the trainees' desire to use the knowledge and skills mastered in the training program on the job. In this thesis, motivation to transfer was not significantly different across the training types. All trainees indicated strong levels of *motivation to transfer* (M = 4.367, 4.310 and 4.231 for general management/leadership and computer training, respectively). Although *motivation to transfer* operated at a strong level, the overall mean score of 4.334, indicated that continuous effort should be made by trainers to ensure that this level is maintained and improved. As *feedback* operated at a moderate level, it is argued that providing trainees with greater *feedback* could stimulate and improve their *motivation to transfer* too. This issue is taken up in Chapter 7 when discussing the importance of *feedback* in motivating a trainee to transfer training.

The Effect of Supervisor Sanctions

The ratings for *Supervisor sanctions* were found to be significantly different across the three training types. Trainees from computer training rated this variable higher than trainees from general and management/leadership training (M = 2.856[a] versus 2.113 and 2.187 respectively). Chapter 1 described *supervisor sanctions* as the extent to which individuals perceive negative responses from supervisors/managers when applying skills learned in training. The results suggest that trainees from computer training likely face a stronger level of sanction, or negative response from their supervisors when applying training on the job than those trainees from the other training types. Whilst trainees across all training types generally rated *supervisor sanctions* quite low, it is nevertheless a pertinent message to supervisors in the Malaysian public sector that they need adopt a more facilitative approach if they want to see transfer of training to occur. Similarly, supervisors should decrease their opposition if they want their trainees to have greater *motivation to transfer* training to the job. Again, this point is taken up in Chapter 7.

The Effect of Secondary Influence Variables

In this thesis, *performance-self efficacy* and *learner readiness* were not significantly different across the training types. All trainees indicated strong levels of *performance-self efficacy* (M = 4.168, 4.194 and 4.119 for general, management/leadership and computer training respectively) and *learner readiness* (M = 4.410, 4.485, 4.365 for general, management/leadership and computer training respectively). Chapter 1 defined *performance-self efficacy* as trainees' beliefs that they are able to change their performance when they want to and *learner readiness* as the extent to which trainees are prepared to enter and participate in training. The results of this study suggest that trainees across all the three training types feel ready to participate in training and they have the confidence to increase their job

[a] For *supervisor sanctions*, the average mean score between 1.0 to 2.0 indicates a less likely of supervisor sanctions; between 2.0 and 2.5 indicates a moderate level of supervisor sanctions and above 2.5 indicates a strong level of supervisor sanctions.

performance at will. The results indicate that as employees in the Malaysian public sector possess *learner readiness* and *performance-self efficacy* they are *motivated to transfer* training to the job. This finding provides the building blocks from which a focus on developing programs which enhance transfer of training can be built. This issue is taken up in Chapter 7.

The Effect of Expected Utility Variables

The expected utility variables: *transfer effort-performance expectations* and *performance-outcomes expectations* were not significantly different across the training types. Chapter 1 defined *transfer effort-performance expectations* as the expectation that the effort devoted to transferring learning will lead to changes in job performance. All trainees across the three types of training rated this variable strongly (M = 4.054). In other words, trainees reported strong levels of expectation that their efforts would convert to greater job performance. These results also suggest the usefulness of Vroom's (1964) expectancy theory in understanding trainees' expectations in a workplace training context. Briefly, as described in Chapter 2, Vroom postulated that individuals will be more motivated when they believe that their effort invested in the training program will result in mastery of the training content.

In contrast, trainees across the three training types rated *performance-outcomes expectations* relatively poorly (M = 3.385). Chapter 1 defined *performance-outcomes expectations* as the expectation that changes in job performance will lead to valued outcomes. In other words, trainees were indicating their low expectations that changes in job performance would necessarily be rewarded. In this study, it was consistently found that expectations regarding intrinsic outcomes are more important to trainees than are extrinsic outcomes. For instance, consider the item related to an expected intrinsic outcome such as "*I expect that I will be more entrusted if my job performance increased*". This item was agreed to by 79 percent of the respondents whereas an item related to expected extrinsic outcomes such as "*I expect that I will be* *promoted if my job performance increased*" was rated as uncertain by 51 percent of the respondents.

Together, these results fit with the fact that employers in the Malaysian public sector do not provide extrinsic rewards to trainees when they have improved their performance as a result of attending training. Consequently, trainees expect their rewards will be of a more intrinsic nature (for instance, being more entrusted, satisfied or empowered) rather than extrinsic (for instance, being promoted). The latter instance is particularly true in the Malaysian public sector where job promotion is not given simply on the completion of training, even though job performance may increase as a result of attending training. This point is further taken up in Chapter 7 in a discussion on the implications of this study for improving transfer of training in the Malaysian public sector.

The Effect Transfer Climate Variables

Transfer climate consists of important environmental elements which influence motivation to transfer (Holton 1996; Seyler et al. 1998). With the exceptions of *feedback* and *supervisor sanctions*, all other climate variables were not significantly different across the training types. For instance, in the analysis of the transfer climate variables, *peer support* and *supervisor support* were found not significantly different across the three training types. Chapter 1 defined *peer* and *supervisor support* as reinforcing and supporting the use of learning to the job. Trainees rated these variables (M = 3.589 for *peer support* and 3.791 for *supervisor support*). The findings suggest that peers and supervisors should improve the level of support they provide trainees back on the job if motivation to transfer is to be enhanced.

On the other hand, all trainees across the three types of training rated *openness to change* and *personal outcomes-negative* relatively poorly (M = 2.745[b] and 3.200

[b] For openness to change, the average mean score between 1.0 to 2.0 indicates an openness to change; between 2.0 and 2.5 indicates a moderate level of openness to change and above 2.5 indicates a poor level of openness to change.

respectively). Chapter 1 defined *openness to change* as the extent to which prevailing group norms are perceived by trainees as discouraging the use of skills and knowledge acquired in training while *personal outcomes-negative* is defined as the extent to which trainees believe that not applying skills and knowledge learned in training will lead to negative outcomes. The low findings may imply that rigidity of teamwork or reticence to accept new ideas or to make any changes in the way the work is normally done is a problem in the workplace. Further, trainees do not have a strong belief that negative outcomes, such as warnings or punishment, would happen to them if they failed to apply training on the job.

Interestingly, trainees across the three types of training rated *personal outcomes-positive* strongly (M = 4.013). Chapter 1 defined *personal outcomes-positive* as the degree to which applying training on the job leads to outcomes that are positive for the trainees. It was found in this study that trainees expect to receive rewards which are not based on monetary or other external sources but on intrinsic factors such as personal satisfaction. As with responses to *feedback*, described above, items related to intrinsic *personal outcomes-positive* sentiments such as "*I will work with more confidence if I put into practice what I have learned from the training*" generated agreement by 95 percent of the respondents. This finding indicates that confidence itself is a reward for trainees. Several studies conducted in the public sector in the United States have also suggested that intrinsic rewards proved to be more important than extrinsic rewards (Bates 2001; Kontoghiorghes 2001).

Other transfer climate variables such as *feedback* and *supervisor sanctions* were significantly different across the three training types and the effect of these variables was discussed above. Overall, despite the exception provided in the findings on the *personal outcomes-positive* variable, transfer climate in the Malaysian public sector could not, at this stage, be described as being at an appropriate level to promote training transfer. Although trainees across the three training types have a strong level of *performance-self efficacy*, *learner readiness* and *motivation to transfer*, other transfer climate variables such as *feedback*, *peer support*, *supervisor support*, *openness to change*, *personal outcomes-negative* may inhibit optimal levels of training transfer as these were not at appropriate levels. Further, trainees across the three training types reported the likelihood of facing sanctions from their supervisors. Together, these results suggest that HRD managers in the Malaysian public sector could take measures to improve the transfer climate if greater levels of transfer is to occur. This point is taken up in Chapter 7.

The Effect of Enabling Variables

Both the enabling variables: *content validity* and *transfer design* were not significantly different across the training types. Trainees across rated *content validity* and *transfer design* highly (M = 4.029 and 4.172 respectively). Chapter 1 defined *content validity* as the extent to which trainees judge *training content* to accurately reflect job requirements and *transfer design* as the degree to which training has been designed and delivered to give trainees the ability to transfer learning to the job and training instructions match job requirements. These results seem to imply that the training content across the training types does not suffer from a disconnection with trainees' job requirements and indeed, that training instructions match trainees' job requirements. In other words, there is a strong coherence between the requirements of the job and the training to perform those required tasks. This is a strong finding in terms of the Malaysian government's investment in public sector training as it demonstrates an appropriate match at the level of content and job specificity of this training. The implication of this as a factor which may enhance transfer of training is discussed in Chapter 7.

The Effect of Ability Variables

Both the ability variables: *personal capacity for transfer* and *opportunity to use* were not significantly different across the three training types. Trainees across the three training types rated *personal capacity for transfer* highly (M = 4.048) and *opportunity to use,* relatively poorly (M = 3.444). Chapter 1 defined *personal capacity for transfer* as the extent to which individuals have the time, energy and mental space in their work lives to make changes required to transfer learning to the job while *opportunity to use* was defined as the extent to which trainees are provided with or obtain resources and tasks on the job. The findings suggest that trainees have the *capacity to transfer* training but they do not have the *opportunity to use* training on the job. It could be that trainees are not given the tasks that require them to use their training on the job or it could be that the required resources (for instance, computer equipment or finance) are not available and this inhibits their opportunity to use training on the job. The findings suggest that these two factors may act against each other in the Malaysian public sector in terms of transfer of training. This point is further taken up in Chapter 7 in a discussion on creating the conditions, which better enhance transfer of training.

The Effect Sharing Variables (TPB)

It is interesting to highlight in this discussion that the TPB variables were not significantly different across the three training types. Trainees across the three training types rated the sharing variables highly. For instance, *knowledge sharing behaviour* (the degree to which trainees share the learned knowledge and skills in the workplace) averaged M = 3.944. Similarly, *Intention to share* (the degree to which trainees are willing to share the learned knowledge and skills in the workplace) had a mean score of M = 4.165; *attitude* (trainees positive or negative evaluations on sharing the learned knowledge and skills in the workplace) was rated at M = 4.365. The mean score for *subjective norm* (perceived social pressure to share the learned knowledge and skills in the workplace) was M = 3.979; and *perceived behavioural control* (perceived ease or difficulty of sharing the learned knowledge and skills in the workplace) was M = 4.095. These are important and interesting findings because in the current training transfer literature (as outlined in Chapter 2), researchers have examined secondary influence variables, expected utility variables, transfer climate variables, enabling variables and ability variables (Chen 2003; Holton et al. 2003; Yamnill 2001) but none had included sharing behaviour across different types of training. Thus, this thesis makes a contribution to the current transfer literature, and HRD practices in the Malaysian public sector in particular, by linking *motivation to transfer* to *sharing behaviour*. In this study, trainees across the three types of training reported strong levels of *motivation to transfer* and *sharing behaviour*. This point is further taken up in Chapter 7.

This section described the findings from research question one demonstrating that trainees across the training types have strong levels of *motivation to transfer*, *learner readiness*, *performance-self efficacy*, *transfer effort-performance expectations*, *personal outcomes-positive* and *personal capacity for transfer.* The training programs themselves were rated strongly in terms of *content validity* and *transfer design*. Nevertheless, it appears that trainees are less likely to transfer training to the job because the transfer climate variables: *feedback*, *peer support*, *supervisor support* and *personal outcomes-negative* are relatively moderate. Further, upon the completion of training, trainees across the three training types face problems with *openness to change*, *supervisor sanctions* and lack of *opportunity to use* training on the job. The findings from research question one could help HRD managers in the Malaysian public sector (and possibly elsewhere) to intervene and improve those variables that are weak in order to promote training transfer. This topic is taken up in Chapter 7. The findings from research question one also showed that *sharing behaviour* was stable and rated highly across the training types. This is an indicator that *sharing behaviour* can be a potential factor, which promotes training transfer because it can be generalised across training types. This Chapter now moves to a consideration of research question two.

5.3.3 Hypothesis Testing for Research Question Two

Research question two asked:

Which of these transfer of training variables:

- *motivation to transfer*;
- secondary influences (*performance-self efficacy, learner readiness*);
- expected utility (*transfer effort-performance expectations, performance-outcomes expectations*);

- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*),
- enabling (*content validity, transfer design*); and
- TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean score across trainees' demographics (gender, age, level of education, work experience, position of employment)?

Hypothesis 2 (H2):

The following transfer of training variables: *motivation to transfer*; secondary influences (*performance-self efficacy*, *learner readiness*); expected utility (*transfer effort-performance expectations*, *performance-outcomes expectations*); transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*); ability (*personal capacity for transfer, opportunity to use*); enabling (*content validity, transfer design*) and TPB (*sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing, perceived behavioural control toward knowledge sharing*) are significantly different in terms of their mean score across trainees' demographics (gender, age, level of education, work experience, position of employment).

MANOVA was used to test H2. The 21 variables listed above were used as the dependent variables while trainees' demographics (gender, age, level of education, work experience, position of employment) were used as independent variables (Coakes & Steed 2003; Pallant 2005). As described in Chapter 3, these six independent variables were analysed separately, one by one, using one-way MANOVA, starting with gender and then followed by: age, level of education, work experience and position of employment. The results are presented below.

Gender

As indicated above, Gender was used as the independent variable while the 21 variables in H2 were the dependent variables (Coakes & Steed 2003; Pallant 2005). The ratio of the largest group (male) to the smallest group (female) was 1.09 (152 ÷ 139). According to Hair et al. (1998), if the ratio of the largest group to the smallest group is less than 1.5, then a test for equality of covariance (Box's Test) is not needed. Then, MANOVA was run and the results were interpreted.

The results of the multivariate test showed significant difference. The Wilk's Lambda was significant ($p<0.05$) (Wilks' Lambda = 0.848; F = 2.304; p = 0.001), indicating that there were significant differences among the variables in terms of their means across gender. Then, the test of between-subject effect output box was checked in order to identify which variables differed. Results indicated that of the 21 variables, only one was significantly different ($p < 0.002$) across gender. That variable was *subjective norm toward knowledge sharing* from the TPB variables (see Appendix L2).

Further examination on the mean score of the variable that differed, found that female respondents rated *subjective norm toward knowledge sharing* higher than the male respondents (M = 4.106 versus 3.864). **Therefore, H2 was supported for this variable across gender.**

Age

The 21 variables stated above were used as the dependent variables while age (30 years and below; between 31 to 40 years; 41 years and above) was used as the independent variable (Coakes & Steed 2003; Pallant 2005). The ratio of the largest group (30 years and below) to the smallest group (41 years and above) was 2.88 (144 ÷ 58). According to Hair et al. (1998), if the ratio of the largest group to the smallest group is more than 1.5, then a test for equality of covariance (Box's Test) is needed. As noted earlier, the Box's Test significant value should be larger than 0.001 (non significant difference) to indicate the equality of covariance across the three groups (Coakes & Steed 2003; Pallant 2005). In this thesis, the Box's Test of equality of covariance showed a significant difference ($p = 0.000$). However, as the Box's test cannot be considered a robust test in itself (Harris 1985; Yamnill 2001), MANOVA was run and the results were interpreted.

The results of the multivariate test showed a statistically significance difference ($p < 0.05$). The Wilk's Lambda was significant at the 0.03 level (Wilks' Lambda = 0.803; $F = 1.478$), indicating that there were significant differences among the variables in terms of their means across age (30 years and below; between 31 to 40 years; 41 years and above). Then, the test of between-subject effect output box was checked in order to identify which of the variables differed. Results indicated that, of the 21 variables, only one was significantly different ($p < 0.002$) across age. That variable was *learner readiness* from the secondary influence variables (see Appendix L3). The Levene's test of equality of error variances showed that *learner readiness* was significant ($p = 0.000$), indicating that this variable violate the assumption of homogeneity of variance. However, because the significant value in the test of between-subject effect output box was less than 0.002, this result was interpreted. Further examination on the mean scores of this variable found that respondents aged 41 years and above rated *learner readiness* higher than the respondents from 30 years and below and between 31 to 40 years of age ($M = 4.631$ versus 4.419 and 4.290 respectively). **Therefore, H2 was supported for this variable across age.**

Level of Education

Level of education was used as the independent variable while the 21 variables in H2 were the dependent variables (Coakes & Steed 2003; Pallant 2005). The ratio of the largest group (bachelor degree and above) to the smallest group (below than bachelor degree) was 1.12 ($154 \div 137$). According to Hair et al. (1998), if the ratio of the largest group to the smallest group is less than 1.5, then a test for equality of covariance (Box's Test) is not needed. Then, MANOVA was run and the results were interpreted.

The results of the multivariate test showed a statistically significance difference. The Wilk's Lambda was significant ($p<0.05$) (Wilks' Lambda = 0.842; F = 2.398; p = 0.001), indicating that there were significant differences among the variables in terms of their means across the two levels of education. Then, the test of between-subject effect output box was checked in order to identify which variables were differed. Results indicated that of the 21 variables, only one was significantly different ($p < 0.002$) across the levels of education. That variable was *supervisor support* from the transfer climate variables (see Appendix L4). The Levene's test of equality of error variances showed that *supervisor support* was not significant (p = 0.071), indicating that this variable did not violate the assumption of homogeneity of variance. Further examination on the mean score of that variable indicated that respondents who have education levels below a bachelor's degree rated *supervisor support* higher than the respondents who have bachelor degree and above (M = 3.923 versus 3.674). **Therefore, H2 was supported for this variable across the two levels of education.**

Work Experience

Again, the 21 variables were used as the dependent variables while work experience (less than 5 years; between 5 to 10 years; above 10 years) was used as the independent variable (Coakes & Steed 2003; Pallant 2005). The ratio of the largest group (less than 5 years) to the smallest group (above 10 years) was 1.90 (127 ÷ 67). As the ratio was greater than 1.5, the test for for equality of covariance (Box's Test) is needed (Hair et al. 1998). The Box's Test significant value should be larger than 0.001 (non significant difference) to indicate the equality of covariance across groups (less than 5 years; between 5 to 10 years; above 10 years) (Coakes & Steed 2003; Pallant 2005). In this study, the Box's Test of equality of covariance showed a significant difference (p = 0.001). This demonstrated a significant difference, but because the Box's test cannot be considered a robust test (Harris 1985; Yamnill 2001), therefore MANOVA was run and the results were interpreted as described below.

The results of the multivariate test showed statistically significance difference ($p < 0.05$). The Wilk's Lambda was significant at 0.02 level (Wilks' Lambda = 0.793; F = 1.568), indicating that there were significant differences among the variables in terms of their means across the three levels of work experience. Then, the test of between-subject effect output box was checked in order to identify which variables which differed. Results indicated that of the 21 variables, none were found below the significant value less than 0.002 (see Appendix L5). Therefore, **H2 was not supported across work experience.**

Position of Employment

Position of employment was used as the independent variable while the 21 variables in H2 were the dependent variables (Coakes & Steed 2003; Pallant 2005). The ratio of the largest group (management group) to the smallest group (support group) was 1.02 (147 ÷ 144). In this case, the Box's test was not required as the ratio of the largest group to the smallest group was less than 1.5. MANOVA was run and the results were interpreted.

The results of the multivariate test showed statistically significance difference. The Wilk's Lambda was significant ($p<0.05$) (Wilks' Lambda = 0.842; F = 2.398; p = 0.000), indicating that there were significant differences among the variables in terms of their means across trainee's positions of employment (management group; support group). The test of between-subject effect output box was checked in order to identify which variables were differed. Results indicated that, of the 21 variables, two were significantly different ($p < 0.002$) across position of employment. These two were *learner readiness* from the secondary influence variables and *personal outcomes-positive* from the transfer climate variables (see Appendix L6). The Levene's test of equality of error variances showed that *learner readiness* (p = 0.000) violated the assumption of homogeneity of variance but not *personal outcomes-positive* (p = 0.955). However, because the significant value in the test between-subject effect output box was less than 0.002, these results were interpreted. Further examination on the mean scores of the two variables that differed indicated that respondents from the management group rated *learner readiness* higher than respondents from the support group (M = 4.529 versus 4.317) and also rated *personal outcomes-positive* higher than the support group (M = 4.113 versus 3.915). **Therefore, H2 was supported for these variables across position of employment**.

In summary, the analysis for H2 found that one variable was statistically different in terms of its mean score in each of the following independent variables: gender (*subjective norms toward knowledge sharing*), age (*learner readiness*) and level of education (*supervisor support*). Two variables (*learner readiness* and *personal outcomes-positive*) were found to be statistically different in position of employment. Table 5.7 summarises the results for research question two. The p value (Wilks' Lambda) indicates significant difference across gender (p = 0.001), age (p = 0.03), education level (p = 0.001), work experience (p = 0.015) and position of employment (p = 0.000). The Chapter now moves to a discussion of the implications of the findings of research question two.

Table 5.7 The Variables That Differed Across Gender (GEN), Age (AGE), Level of Education (EDU),Work Experience (WRK) and Position of Employment (EMP)

Category of variables	Variables Name	GEN	AGE	EDU	WRK	EMP
Dependent variable in the research framework	Motivation to transfer					
Secondary influence variables	Learner readiness		√			√
	Performance-self efficacy					
Expected utility variables	Transfer effort-performance expectations					
	Performance-outcomes expectations					
Transfer climate variables	Feedback					
	Peer support					
	Supervisor support			√		
	Openness to change					
	Personal outcomes positive					√
	Personal outcomes-negative					
	Supervisor sanctions					
Enabling variables	Content validity					
	Transfer design					
Ability variables	Personal capacity for transfer					
	Opportunity to use					
TPB variables	Sharing behaviour					
	Intention to share					
	Attitude toward knowledge sharing					
	Subjective norms toward knowledge sharing	√				
	Perceived behavioural control toward knowledge sharing					
	Number of variables differed	1	1	1	0	2
	F	2.304	1.478	2.398	1.568	2.671
	P	0.001	0.030	0.001	0.015	0.000

5.3.4 The relationship between the transfer of training variables and trainee demographics

The findings for the second research question revealed that only four variables were significantly different across the trainees' demographics. Specifically, *learner readiness* was significantly different across age and position of employment; *supervisor support* was significantly different across level of education, *personal outcomes-positive* was significantly different across position of employment and finally, *subjective norm toward knowledge sharing* was significantly different across gender. All other variables were not significantly different. They were viewed the same regardless of gender, age, level of education, work experience and position of employment and the level of strength are similar when examining these variables across training types as discussed in research question one. Those variables that were significantly different are discussed below.

Learner Readiness

Learner readiness was significantly different across age and position of employment. With regard to age, whilst all trainees indicated high levels of *learner readiness*, those over 41 years old were more ready to participate in training (M = 4.631) than trainees in the age of 30 years and below (M = 4.419) and in the 31 to 40 years bracket (M = 4.290). It could be that senior trainees are those who are thinking about their career development more seriously than the junior ones and have perhaps targeted the training more effectively to their needs. Future research is needed to investigate this, and other areas for future investigation are taken up in Chapter 7.

Further, *learner readiness* was also significantly different across position of employment. Trainees from management group (M = 4.529) indicated a higher readiness to participate in training than trainees from the support group (M = 4.317). In the literature, research has suggested that trainees who received the freedom to choose training showed a higher readiness to attend training than those who did not have such freedom (Baldwin et al. 1991; Hicks & Klimoski 1987; Ryman & Biersner 1975) (see Chapter 2 section 2.5.2). However, research investigating the level of readiness across position of employment has not been conducted in any of the studies as investigated for this thesis. Therefore, the present study has contributed to the transfer literature by showing that *learner readiness* differed across position of employment. In this thesis, trainees from the management group (M = 4.529) had a higher readiness to participate in training than trainees from the support group (M = 4.317). One reason is that trainees from the management group have greater freedom to choose any training programs they would like to attend and therefore have higher readiness to participate. However, future research is needed to confirm this. This issue is taken up in Chapter 7 when discussing the implications for theory and HRD practice.

Supervisor Support

The testing of the transfer climate variables found that only *supervisor support* performed differently in the two education levels. Specifically, trainees with less than a bachelor's degree rated *supervisor support* higher than trainees who held a bachelor's degree or greater (M = 3.923 versus 3.674). This indicates that less educated trainees perceive greater support from their supervisors than the more educated ones. It could be that more educated trainees are more independent when carrying out their duties and therefore do not expect too much support from their supervisors. It could also reflect that supervisors may not feel it necessary to provide encouragement or support to more educated workers. As support from supervisors has been suggested by many researchers to influence transfer (see Chapter 2, section 2.5.1), therefore, research investigating why supervisors in the Malaysian public sector give less support to more educated trainees is warranted. This point is again taken up in Chapter 7.

Personal Outcomes-Positive

Another transfer climate variable that was significantly different across the demographic data was *personal outcomes-positive*. Specifically, *personal outcomes-*

positive was significantly different across position of employment. Trainees from the management group (M = 4.113) rated *personal outcomes-positive* higher than trainees from the support group (M = 3.915). Because trainees in this study perceived *personal outcomes-positive* as intrinsic rather extrinsic, it could be that trainees from the management group receive higher intrinsic outcomes than trainees from support group. Because reward is important for transfer of training (see Chapter 2, section 2.5.1), future research to investigate what sort of intrinsic rewards would be best for management group and support group would be useful in further enhancing transfer of training. This point is taken up in Chapter 7.

Subjective Norm Toward Knowledge Sharing

Subjective norm toward knowledge sharing is the only variable that was significantly different across gender. Female trainees rated *subjective norm* higher (M = 4.106) than the male trainees (M = 3.864). These results suggest that female trainees have a stronger belief than their male counterparts that their peers and supervisors would have a positive view about *sharing behaviour* and would endorse this behaviour. This may imply that female trainees have better perceptions about the role of peers and supervisors in reinforcing *sharing behaviour* than the male trainees. This finding is important because any effort to stimulate knowledge sharing in the workplace must involve every employee regardless of their gender. This point is taken up in Chapter 7.

In conclusion, transfer of training variables did not vary much across demographics. However, the findings from research question two provide useful information to HRD managers in the Malaysian public sector that *learner readiness* is different across age and position of employment. Research question two revealed that senior trainees had higher *learner readiness* to participate in training than the junior trainees and trainees from management group had higher *learner readiness* to participate in training than trainees from support group. Further, research question two also revealed that less educated trainees believed they received higher *supervisor support* than the more educated ones; the management group perceived *personal outcomes-positive* higher than the support group and finally, female trainees have better perceptions regarding *subjective norm toward knowledge sharing* than male trainees. These findings are important for HRD practices in the Malaysian public sector and the implications of these findings for HRD practice are discussed in Chapter 7.

5.4 Discussion

This Chapter presented the results of hypothesis testing for H1 and H2 and provided the answers to research questions one and two. The Chapter described the trainees who responded to the survey and who had recently attended three types of workplace training courses. The survey population was made up of roughly equal numbers of men and women and approximately equal numbers in support positions or managerial positions. This was reflected in the fact that approximately half were degree qualified and the other half, less than degree qualified. Further, training attendance was prevalent amongst trainees with less than 5 years of work experience.

Based on the demographic data, research question one explored the differences and similarities of transfer of training variables across the three training types (general training; management/leadership training; computer training) while research question two explored the differences and similarities of transfer of training variables across demographics (gender; age; level of education; work experience; position of employment). Results indicate that the transfer of training variables did not vary much across the three training types or across trainee demographics. Only two variables (*feedback* and *supervisor sanctions*) were significantly different across the three training types while across demographics and only four variables (*learner readiness*, *supervisor support*, *personal outcomes-positive* and *subjective norm toward knowledge sharing*) were significantly different.

The Chapter confirmed that trainees in this study had strong levels of *motivation to transfer*, *learner readiness*, *performance-self efficacy*, *transfer effort-performance expectations*, *personal outcomes-positive* and *personal capacity for transfer.* The training programs themselves were rated strongly in terms of *content validity* and *transfer design*. Barriers to transfer of training were also identified. These included the transfer climate variables: *feedback*, *peer support*, *supervisor support* and *personal outcomes-negative*. Further, upon the completion of training, trainees face problems with *openness to change*, *supervisor sanctions* and lack of *opportunity to use* training on the job. The findings from research questions one and two also showed that *sharing behaviour* was stable and rated highly across training types and demographics. This is an indicator that *sharing behaviour* is a potential factor, which promotes training transfer because it can be generalised across training types and demographics. This issue is taken up in the discussion on the evolution of the structural model in Chapter 6.

5.5 Summary

This Chapter described hypothesis testing (H1 and H2) to answer the two research questions posed in this thesis. Both H1 and H2 were supported. Together, H1 and H2 provide a better understanding of which transfer variables are significantly different, which rated strongly, moderately and poorly across training types and demographics.

The next Chapter considers the remaining research questions and hypotheses (H3, H4, H5, H6, H7) and identifies the variables which are significant in explaining trainees' motivation to transfer and the influence of sharing behaviour on motivation to transfer training (H8, H9, H10). Chapter 6 also discusses the evolution of the final structural model derived from the work of this thesis.

CHAPTER 6

HYPOTHESIS TESTING:
RESULTS AND DISCUSSION (PART 2)

6.1 Introduction

Chapter 5 described the hypothesis testing for research questions one (H1) and two (H2) and discussed in detail the results obtained. This Chapter continues with the remaining research questions and hypotheses (H3, H4, H5, H6, H7) and details the variables which are significant in explaining trainees' motivation to transfer their training in the workplace and the variables which influence sharing behaviour (H8, H9, H10). Finally, the Chapter discussed the results for each research question and briefly describes the evolution of the final structural model derived from the work of this thesis.

6.2 Hypothesis Testing

In Chapter 1, six research questions were introduced which formed the basis of the enquiry into transfer of training in the Malaysian public sector. A total of 10 hypotheses were constructed to assist in answering the research questions. Chapters 5 and 6 now discuss the findings from this inquiry. Chapter 5 presented and discussed the results of H1 and H2 belonging to research question one and two, respectively. The remaining research questions, their associated hypotheses and results are presented below.

6.2.1 Hypothesis Testing for Research Question Three

Research question three asked:

Which of these transfer of training variables:

- secondary influences *(performance-self efficacy, learner readiness*);
- expected utility *(transfer effort-performance expectations, performance-outcomes expectations*);
- transfer climate (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*);
- ability (*personal capacity for transfer, opportunity to use*); and
- enabling (*content validity, transfer design*) serve as key significant predictors of one's motivation to transfer training?

As described in Chapter 3 (see section 3.3.3), multiple regression analysis was selected to test H3, H4, H5, H6 and H7 (Coakes & Steed 2003; Pallant 2005). Each was tested separately in order to identify the key significant predictors of *motivation to transfer* from the *secondary influence variables* (H3) and then those from *expected utility* (H4), *transfer climate* (H5), *enabling* (H6) and the *ability variables* (H7).

Hypothesis 3 (H3):

H3: Secondary influences variables (*performance-self efficacy, learner readiness*) will explain a significant proportion of variance in *motivation to transfer*.

For testing H3, the independent variables were performance-self efficacy and learner readiness. Motivation to transfer was the dependent variable (Coakes & Steed 2003; Pallant 2005). As depicted in Table 6.1, the R square value is 0.47, suggesting that the model explains 47 percent of the variance in motivation to transfer training. The statistical significance as depicted in the ANOVA analysis (see Table 6.2) indicates that the model reaches statistical significance (Sig = 0.000, $p<0.0005$) (Coakes & Steed 2003; Pallant 2005).

Table 6.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Motivation to transfer	0.685	0.469	0.466	0.35545

Predictors: (Constant), Learner Readiness, Performance-Self Efficacy

Table 6.2 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
Motivation to transfer	Regression	32.174	2	16.087	127.324	0.000
	Residual	36.388	288	0.126		
	Total	70.321	290			

Predictors: (Constant), Learner Readiness, Performance-Self Efficacy

When evaluating each of the secondary influence variables (see Table 6.3), both *learner readiness* (β = 0.58, p ≤ 0.001) and *performance-self efficacy* (β = 0.21, p ≤ 0.001) were substantiated. **Therefore, H3 was supported**. The tolerance values for *learner readiness* and *performance-self efficacy* were above the cut-off point 0.10 and the VIF values were below 10, indicating that multicollinearity was not a problem (Hair et al. 1998).

Table 6.3 Coefficients: Secondary Influence Variables

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.078	0.218		4.954	0.000		
Learner readiness	0.537	0.042	0.583	12.681	0.000	0.873	1.145
Performance-self efficacy	0.212	0.047	0.209	4.540	0.000	0.873	1.145

Dependent Variable: Motivation to Transfer

Hypothesis 4 (H4):

H4: Expected utility variables (*transfer effort-performance expectations, performance-outcomes expectations*) will explain a significant proportion of variance in *motivation to transfer*.

For testing H4, the independent variables were *transfer effort-performance expectations* and *performance-outcomes expectations*. *Motivation to transfer* was the dependent variable (Coakes & Steed 2003; Pallant 2005).

As depicted in Table 6.4, the R square value is 0.20, suggesting that the model explains 20 percent of the variance in *motivation to transfer* training. The statistical significance as depicted in the ANOVA analysis (Table 6.5) indicates that the model reaches statistical significance (Sig = 0.000, p<0.0005) (Coakes & Steed 2003; Pallant 2005).

Table 6.4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Motivation to transfer	0.452	0.204	0.199	0.43521

Predictors: (Constant), Transfer Effort-Performance Expectations, Performance-Outcomes Expectations

Table 6.5 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
Motivation to transfer	Regression	14.012	2	7.006	36.989	0.000
	Residual	54.550	288	0.189		
	Total	68.562	290			

Predictors: (Constant), Transfer Effort-Performance Expectations, Performance-Outcomes Expectations

When evaluating each of the expected utility variables (see Table 6.6), only *transfer effort-performance expectations* was a significant predictor ($\beta = 0.45$, $p \leq 0.001$), thus **H4 was supported for transfer effort-performance expectations**. The tolerance values for *transfer effort-performance expectations* and *performance-outcomes expectations* were above the cut-off point 0.10 and the VIF values were below 10, indicating that multicollinearity was not a problem (Hair et al. 1998).

Table 6.6 Coefficients: Expected Utility Variables

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.693	0.207		13.028	0.000		
Transfer effort-performance expectations	0.409	0.050	0.454	8.165	0.000	0.893	1.120
Performance-outcomes expectations	-0.005	0.041	-0.041	-0.117	0.907	0.893	1.120

Dependent Variable: Motivation to Transfer

Hypothesis 5 (H5):

H5: Transfer climate variables (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative, supervisor sanctions*) will explain a significant proportion of variance in *motivation to transfer*.

For testing H5, the independent variables were *feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative* and *supervisor sanctions*. *Motivation to transfer* was the dependent variable (Coakes & Steed 2003; Pallant 2005).

As depicted in Table 6.7, the R square value is 0.47, suggesting that the model explains 47 percent of the variance in *motivation to transfer* training. The statistical significance as depicted in the ANOVA analysis (Table 6.8) indicates that the model reaches statistical significance (Sig = 0.000, $p<0.0005$) (Coakes & Steed 2003; Pallant 2005).

Table 6.7 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Motivation to transfer	0.683	0.467	0.453	0.35946

Predictors: (Constant), Feedback, Peer Support, Supervisor Support, Openness to Change, Personal Outcomes-Positive, Personal Outcomes-Negative, Supervisor Sanctions.

Table 6.8 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
Motivation to transfer	Regression	31.995	7	4.571	35.373	0.000
	Residual	36.568	283	0.129		
	Total	68.562	290			

Predictors: (Constant), Feedback, Peer Support, Supervisor Support, Openness to Change, Personal Outcomes-Positive, Personal Outcomes-Negative, Supervisor Sanctions.

When evaluating each of the transfer climate variables (see Table 6.9), only *feedback* (β = -0.130, p $\leq$ 0.05), *personal outcomes-positive* (β = 0.62, p $\leq$ 0.001) and *supervisor sanctions* (β = -0.17, p $\leq$ 0.001) were significant predictors of *motivation to transfer*. Therefore, **H5 was supported for these variables**. The tolerance values for the transfer climate variables were above the cut-off point 0.10 and the VIF values were below 10, indicating that multicollinearity was not a problem (Hair et al. 1998).

Table 6.9 Coefficients: Transfer Climate Variables

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.079	0.220		9.463	0.000		
Feedback	-0.105	0.043	-0.130	-2.468	0.014	0.676	1.480
Peer support	0.038	0.044	0.050	0.858	0.391	0.554	1.806
Supervisor support	0.055	0.046	0.072	1.193	0.234	0.517	1.933
Openness to change	0.047	0.028	0.084	1.711	0.088	0.774	1.292
Personal outcomes-positive	0.574	0.048	0.624	11.987	0.000	0.695	1.440
Personal outcomes-negative	0.029	0.029	0.049	0.994	0.321	0.777	1.286
Supervisor sanctions	-0.097	0.027	-0.174	-3.538	0.000	0.781	1.281

Dependent Variable: Motivation to Transfer

Hypothesis 6 (H6):

H6: Enabling variables (*content validity, transfer design*) will explain a significant proportion of variance in *motivation to transfer*.

For testing H6, the independent variables were content validity and transfer design. Motivation to transfer was the dependent variable (Coakes & Steed 2003; Pallant 2005). As depicted in Table 6.10, the R square value is 0.24, suggesting that the model explains 24 percent of the variance in motivation to transfer training. The statistical significance as depicted in the ANOVA analysis (Table 6.11) indicates that the model reaches statistical significance (Sig = 0.000, $p<0.0005$) (Coakes & Steed 2003; Pallant 2005).

Table 6.10 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Motivation to transfer	0.494	0.244	0.239	0.42419

Predictors: (Constant), Content Validity, Transfer Design.

Table 6.11 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
Motivation to transfer	Regression	16.740	2	8.370	46.514	0.000
	Residual	51.823	288	0.180		
	Total					

Predictors: (Constant), Content Validity, Transfer Design.

When evaluating each of the enabling variables (see Table 6.12), both *content validity* (β = 0.39, p ≤ 0.001) and *transfer design* (β = 0.20, p ≤ 0.001) were significant predictors of *motivation to transfer*, thus **supporting H6**. The tolerance values for both variables were above the cut-off point 0.10 and the VIF values were below 10, indicating that multicollinearity was not a problem (Hair et al. 1998).

Table 6.12 Coefficients: Enabling Variables

	Unstandardised Coefficients		Standardised Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.142	0.243		8.824	0.000		
Content validity	0.333	0.046	0.389	7.183	0.000	0.896	1.116
Transfer design	0.203	0.054	0.204	3.777	0.000	0.896	1.116

Dependent Variable: Motivation to Transfer

Hypothesis 7 (H7):

H7: Ability variables (*personal capacity for transfer, opportunity to use*) will explain a significant proportion of variance in *motivation to transfer*.

For testing H7, the independent variables were *personal capacity for transfer* and *opportunity to use*. *Motivation to transfer* was the dependent variable (Coakes & Steed 2003; Pallant 2005). As depicted in Table 6.13, the R square value is 0.24, suggesting that the model explains 24 percent of the variance in *motivation to transfer* training. The statistical significance as depicted in the ANOVA analysis (Table 6.14) indicates that the model reaches statistical significance (Sig = 0.000, p<0.0005) (Coakes & Steed 2003; Pallant 2005).

Table 6.13 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Motivation to transfer	0.493	0.243	0.238	0.42447

Predictors: (Constant), Personal Capacity for Transfer, Opportunity to Use

Table 6.14 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
Motivation to transfer	Regression	16.672	2	8.336	46.265	0.000
	Residual	51.891	288	0.180		
	Total	68.562	290			

Predictors: (Constant), Personal Capacity for Transfer, Opportunity to Use

When evaluating each of the ability variables (see Table 6.15), both *personal capacity for transfer* (β = 0.41, p $\leq$ 0.001) and *opportunity to use* (β = 0.19, p $\leq$ 0.001) were significant predictors of *motivation to transfer*, thus **supporting H7**. The tolerance values for both variables were above the cut-off point 0.10 and the VIF values were below 10, indicating that multicollinearity was not a problem (Hair et al. 1998).

Table 6.15 Coefficients: Ability Variables

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.343	0.209		11.231	0.000		
Personal capacity for transfer	0.385	0.049	0.413	7.827	0.000	0.945	1.058
Opportunity to use	0.126	0.035	0.190	3.608	0.000	0.945	1.058

Dependent Variable: Motivation to Transfer

In summary, research question 3 shows that: both secondary influence variables (*performance-self efficacy; learner readiness*); one expected utility variable (*transfer effort-performance expectations*); three transfer climate variables (*feedback; personal outcomes-positive; supervisor sanctions*); and both enabling (*content validity; transfer design*) and ability (*personal capacity for transfer; opportunity to use*) variables, explain a significant proportion of variance in *motivation to transfer*. Therefore, H3, H4, H5, H6 and H7 are supported for these variables. Table 6.16 provides the summary of results for research question three.

Table 6.16 Summary of Results for Research Question Three

Category of Variables	Variables Name	P	Beta
Secondary influence	Performance-self efficacy	0.000	0.209
	Learner readiness	0.000	0.583
Expected utility	Transfer effort-performance expectations	0.000	0.454
Transfer climate	Feedback	0.014	- 0.130
	Personal outcomes-positive	0.000	0.624
	Supervisor sanctions	0.000	- 0.174
Enabling	Content validity	0.000	0.389
	Transfer design	0.000	0.204
Ability	Personal capacity for transfer	0.000	0.413
	Opportunity to use	0.000	0.190

The Chapter now moves to discuss the results obtained for research question three.

6.2.2 The key significant predictors of one's motivation to transfer training

It was noted in Chapter 1 that transfer of training will occur when trainees are motivated to use the knowledge and skills learned in their training when they return to their jobs (Baldwin & Ford 1988; Noe 1986; Noe & Schmitt 1986; Wexley & Latham 1991). However, thus far in this research field, little is known about factors that could affect trainees' motivation to transfer training to the job (Seyler, Holton, Bates, Burnett & Carvalho 1998; Tannenbaum & Yulk 1992). A major line of investigation in this study is to remedy this research gap and determine the factors which predict motivation to transfer training. Thus, research question three was answered using multiple regression analysis to identify the key significant predictors of *motivation to transfer*. The discussion commences with the key significant predictors of *motivation to transfer* from the *secondary influence variables* and then those from *expected utility*, *transfer climate*, *ability* and the *enabling variables*.

Secondary Influence Variables

Multiple regression analysis revealed that secondary influence variables explained approximately 47 percent of the variance in *motivation to transfer*. Results also showed that both *learner readiness* and *performance-self efficacy* were significant predictors of *motivation to transfer*. *Learner readiness* explained a large amount of variance in motivation to transfer training because it had the strongest standardised beta (β = 0.58), followed by *performance-self efficacy* (β = 0.21). These results suggest that trainees are more motivated to transfer training when they are ready to participate in training and when they have the confidence that they are able to change their performance. In Holton's (1996) model (see Chapter 2, section 2.5), a number of personality characteristics were hypothesised to influence *motivation to transfer* indirectly via its relationship with *motivation to learn*. This thesis showed that personality characteristics such as *learner readiness* and *performance-self efficacy* actually have a direct effect on *motivation to transfer*. This point is taken up in Chapter 7 when discussing the implications for theory and HRD practice. These results also support the findings from previous studies that demonstrated a direct effect of *learner readiness* and *performance-self efficacy* on training outcomes (Gist 1989; Gist, Schwoerer & Rosen 1989; Gist, Stevens & Bavetta 1991; Tannenbaum, Mathieu, Salas & Cannon-Bowers 1991) (See Chapter 2, section 2.5.2).

Expected Utility Variables

Multiple regression analysis revealed that the expected utility variables explained approximately 20 percent of the variance in *motivation to transfer*. Results also showed that *transfer effort-performance expectations* emerged as the only significant predictor of *motivation to transfer* but not *performance-outcomes expectations*. The standardised beta in the model indicates that *transfer effort-performance expectations* (β = 0.45) had a significant influence on *motivation to transfer*. These results suggest that understanding trainees' expectations is important in order to motivate them to transfer training to the job. This finding is consistent with Vroom's (1964) expectancy theory that suggests individuals will be more motivated when they believe that their effort invested in the training program will result in mastery of the training content. Further, this finding confirmed the direct effect of *transfer effort-performance expectations* on *motivation to transfer* as in Holton's (1996) model (see Chapter 2, section 2.5).

Transfer Climate Variables

Multiple regression analysis revealed transfer climate variables explained approximately 47 percent of the variance in *motivation to transfer*. Results also showed that the most significant transfer climate variable was *personal outcomes-positive* (β = 0.62), followed by *supervisor sanctions* (β = -0.17) and *feedback* (β = -0.13). These results suggest that trainees are more motivated to transfer training when they believe that applying training on the job will lead to valued outcomes. Further, when they perceive fewer *sanctions* from their supervisors and receive *feedback* regarding their job performance they are motivated to transfer their training.

It was found that *feedback* was negatively related to *motivation to transfer*, and this was indicated by a negative standardised beta. This pattern suggests the possibility of one or more suppresser variables were present as described by Cohen and Cohen (1983). A suppressor variable inhibits the effect of other independent variables in explaining variance in a dependent variable. This happens when one variable (X1) has a low correlation with the criterion (Y), but has a strong correlation with another predictor (X2), which has a positive correlation with the criterion (Cohen & Cohen 1983). This pattern is evident in the relationship between *feedback* and *personal outcomes-positive*. The correlation matrix (see Table 3.5, pg.76) indicates that, *feedback* has a low correlation with *motivation to transfer* (r = 0.22) but a strong relationship with *personal outcomes-positive* (r = 0.44), which is strongly correlated with *motivation to transfer* (r = 0.65). Thus, *personal outcomes-positive*, acting as a suppressor variable, inhibited the effect of *feedback* on *motivation to transfer*. The presence of a suppressor effect was also found in three other relevant studies (Cheng & Ho 2001; Facteau et al. 1995; Bates et al.2000). This point is taken up in Chapter 7 as it has implications for HRD practice, particularly in preparing supervisors in their role of providing meaningful feedback to trainees returning to work.

Overall, this thesis confirmed the direct effect of transfer climate on *motivation to transfer* as in Holton's (1996) model (see Chapter 2, section 2.5). It is an important finding for HRD managers as it indicates the pivotal role that environment plays in motivating trainees to transfer. The regression analysis of transfer climate variables found that *peer support*, *supervisor support*, *openness to change* and *personal outcomes-negative* were not significantly different. However, in other studies these same factors have been significantly different, suggesting that transfer climate is unique across organisations (Facteau et al. 2001; Holton et al. 2000; Van Der Klink et al. 2001)(see Chapter 2, section 2.5.1).

Enabling Variables

Multiple regression analysis revealed that enabling variables explained approximately 24 percent of the variance in *motivation to transfer*. Results also showed that both *content validity* and *transfer design* were the significant predictors. *Content validity* (β = 0.39) had the strongest influence, followed by *transfer design* (β = 0.20). These results suggest that trainees are more motivated to transfer training when the training content accurately reflect their job requirements and when the training has been designed and delivered to enable them to transfer training to the job.

In Holton's (1996) model, enabling variables were hypothesised to have a direct effect on individual performance (see Chapter 2, section 2.5). This thesis revealed that enabling variables such as *content validity* and *transfer design* have a direct effect on *motivation to transfer* as well. As transfer of training is important for individual job performance, this thesis indicates that *content validity* and *transfer design* are significant in explaining *motivation to transfer* before individual performance is achieved. These findings are discussed further in Chapter 7 as they have implications for HRD interventions which enhance transfer of training.

Ability Variables

Multiple regression analysis revealed that the ability variables explained approximately 24 percent of the variance in *motivation to transfer*. Results also showed that both ability variables: *personal capacity for transfer* and *opportunity to use* were significant predictors. Specifically, *personal capacity for transfer* had the strongest influence (β = 0.41), followed by *opportunity to use* (β = 0.19). These results suggest that trainees are more motivated to transfer when they have the time and energy and when they are provided with the tasks and resources to use training on the job.

In Holton's (1996) model, ability variables were hypothesised to have a direct influence on learning outcomes (see Chapter 2, section 2.5). This thesis revealed that ability variables such as *personal capacity for transfer* and *opportunity to use* have a direct effect on *motivation to transfer* as well. The results indicate the importance for trainees to have the *capacity for transfer* and *opportunity to use* training before they are motivated to transfer training to the job. This point is taken up in Chapter 7.

Overall, research question three revealed that, the secondary influence variables (*learner readiness* and *performance-self efficacy*) and the transfer climate variables (*personal outcomes-positive*, *feedback* and *supervisor sanctions*) are the most important variables in understanding trainees' *motivation to transfer* training in the Malaysian public sector because together they explain the highest variance, followed by enabling variables (*content validity* and *transfer design*), ability variables (*personal capacity for transfer* and *opportunity to use*) and expected utility variable (*transfer effort-performance expectations*).

The Chapter now moves to describe the hypothesis testing (H8) for research question four and presented the results.

6.2.3 Hypothesis Testing for Research Question Four

Research question four asked:

Is the variable: *intention to share* significantly correlated with *sharing behaviour* and is *sharing behaviour* significantly correlated with *motivation to transfer*?

Hypothesis 8 (H8):

H8: *Intention to share* will be significantly correlated to *sharing behaviour* and *sharing behaviour* will be significantly correlated to *motivation to transfer*.

For testing H8, the Pearson correlation was used to test H8 because this hypothesis involved two variables to examine the relationship between *intention to share* and *sharing behaviour* and the relationship between *sharing behaviour* and *motivation to transfer* (see Chapter 3, section 3.3.3) (Coakes & Steed 2003; Pallant 2005). In order to examine the strength of the relationship hypothesised, the researcher used Cohen

(1988) guidelines. According to Cohen (1988), the correlation (r) between 0.10 to 0.29 is considered small; between 0.30 to 0.49, medium and between 0.50 to 1.00 is large.

Pearson correlational analysis revealed that *intention to share* correlated significantly with *sharing behaviour* ($p < 0.01$) and the strength of the relationship was large ($r = 0.68$) (Cohen 1988). Further, *sharing behaviour* was also found to correlate significantly with *motivation to transfer* ($p < 0.01$) and the strength of the relationship was medium ($r = 0.31$) (Cohen 1988). These findings **supported H8** (see Table 3.5, pg.76 for the correlation matrix). The Chapter now moves to discuss the results obtained for research question four.

6.2.4 The relationships between *intention to share*, *sharing behaviour* and *motivation to transfer*

Chapter 2 indicated that the theory of planned behaviour may be used to provide an insight into an individual's intention to share learned knowledge and skills with others in the workplace. The TPB model provides a set of variables to test the relationship of *knowledge sharing* with *motivation to transfer training* and this was tested in research question four.

Pearson correlation analysis revealed that *intention to share* was significantly correlated with *sharing behaviour* ($p < 0.01$). The direction of the relationship was positive and the strength of the relationship was strong ($r = 0.68$) (Cohen 1988). These results suggest that the stronger trainees' *intention to share*, the stronger will be the sharing of learned knowledge and skills. The finding is consistent with Ajzen's (1991) theory of planned behaviour that suggests one's intention is the best predictor of one's behaviour (see Chapter 2, section 2.7).

Further, Pearson correlation analysis showed that *sharing behaviour* was significantly correlated with *motivation to transfer*. Again, the direction of the relationship was positive and the strength of the relationship was moderate (r = 0.31) (Cohen 1988). These results suggest that *sharing behaviour* is linked with *motivation to transfer*. Because the direction of the relationship between *sharing behaviour* and *motivation to transfer* is positive, it means that the more trainees share the learned knowledge and skills in the workplace, the stronger will be their *motivation to transfer* training to the job. This is an important and interesting finding because the current literature on training transfer has focused almost exclusively on trainees' personality characteristics, the training design and work environment factors (Baldwin and Ford 1988; Holton 1996; Holton et al. 2000; Rouiller & Goldstein 1997) (see Chapter 2). No previous research to the author's knowledge has empirically examined the effect of *sharing behaviour* on *motivation to transfer*, and certainly not in the context of the Malaysian public sector. Thus, this thesis makes a significant contribution to the current transfer literature and to the HRD practices in the Malaysian public sector by showing that *sharing behaviour* can play its role in motivating a trainee to transfer training to the job. The implication of this finding for HRD practice is considered in Chapter 7.

6.2.5 Hypothesis Testing for Research Question Five

Research question five asked:
What are the significant predictors of *intention to share*?

Hypothesis 9 (H9):

H9: *Attitude, subjective norm* and *perceived behavioural control toward knowledge sharing* will explain a significant proportion of variance in *intention to share*.

For testing H9, multiple regression analysis was used to identify the key significant predictors of *intention to share* (see Chapter 3, section 3.3.3). The procedures were identical with those described when testing H3 to H7. For H9, the dependent variable was *intention to share* while *attitude, subjective norm* and *perceived behavioural control toward knowledge sharing* were the independent variables (Coakes & Steed 2003; Pallant 2005).

As depicted in Table 6.17, the R square value is 0.54, suggesting that the model explains 54 percent of the variance in *intention to share*. The statistical significance in the ANOVA analysis (Table 6.18) indicates that the model reaches statistical significance (Sig = 0.000, $p<0.0005$) (Coakes & Steed 2003; Pallant 2005).

Table 6.17 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.732	0.536	0.531	0.31435

Predictors: (Constant), Attitude, Subjective Norm, Perceived Behavioural Control

Table 6.18 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.722	3	10.907	110.379	0.000
	Residual	28.361	287	0.099		
	Total	61.082	290			

Predictors: (Constant), Attitude, Subjective Norm, Perceived Behavioural Control

When evaluating each of the independent variable (see Table 6.19), *attitude toward knowledge sharing* ($\beta = 0.34$, $p \leq 0.001$), *subjective norm toward knowledge sharing* ($\beta = 0.18$, $p \leq 0.01$) and *perceived behavioural control toward knowledge sharing* ($\beta = 0.35$, $p \leq 0.001$) were significant predictors of *intention to share*, thus **supporting H9**. The tolerance values for the independent variables were above the cut-off point 0.10 and the VIF values were below 10, indicating that multicollinearity was not a problem (Hair et al. 1998).

Table 6.19 Coefficients-Antecedents of Intention to Share

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.048	0.175		5.972	0.000		
Attitude toward knowledge sharing	0.309	0.047	0.336	6.606	0.000	0.627	1.595
Subjective norm toward knowledge sharing	0.139	0.041	0.181	3.379	0.001	0.565	1.771
Perceived behavioural control toward knowledge sharing	0.297	0.043	0.354	6.908	0.000	0.615	1.626

Dependent Variable: Intention to Share

6.2.6 The significant predictors of intention to share

As explained above, the TPB model (Ajzen 1991) illustrates that one's intentions give rise to one's behaviour. Acting on this relationship between intention and behaviour are: one's *attitude* towards the behaviour; the *subjective norms* surrounding the behaviour; and one's *perceived behavioural controls* (see Chapter 2, section 2.6). In a transfer of training context, this research question explored the effect of *intention to share* the knowledge and skills learned in training back into the job.

Multiple regression analysis revealed that *attitude*, *subjective norm* and *perceived behavioural* control toward knowledge sharing were significant predictors of *intention to share*. This is consistent with Ajzen's (1991) theory of planned behaviour that it suggests that *attitude*, *subjective norm* and *perceived behavioural control* are the antecedents of intention (see Chapter 2, section 2.7). In this thesis, *attitude* (β = 0.34) and *perceived behavioural control* (β = 0.35) had a similar strengths in predicting *intention to share*, followed by *subjective norm* (β = 0.18). These results suggest that trainees are willing to share the learned knowledge and skills in the workplace when they perceive that sharing is easy to perform (*perceived behavioural control*); when they experience a positive evaluation of sharing (*attitude*); and when they believe that their peers and supervisors will endorse or approve the sharing behaviour (*subjective norm*). In research question four we observed that *sharing* *behaviour* has a positive relationship with *motivation to transfer*. Research question five now provides further support for the potential of *sharing behaviour* as a transfer factor because trainees in this study demonstrated strong a positive *attitude*, *subjective norm* and *perceived behavioural control toward knowledge sharing*. This thesis has shown the usefulness of the theory of planned behaviour (Ajzen 1991) in understanding trainees' *attitude*, *subjective norm* and *perceived behavioural control* toward sharing the learned knowledge and skills in the workplace.

Now, the Chapter moves to hypothesis testing for research question six (H10) that examines the direct and indirect influence of *sharing behaviour*, in combination with the secondary influence variable, transfer climate variables, enabling variable and ability variable on *motivation to transfer*.

6.2.7 Hypothesis Testing for Research Question Six

Research question six asked:
What are the direct and indirect relationships (via the significant predictors identified in research question three) between *sharing behaviour* and *motivation to transfer*?

Hypothesis 10 (H10):
H10: *Sharing behaviour* will have a direct and indirect relationship (via the significant predictors identified in research question three) with *motivation to transfer*.

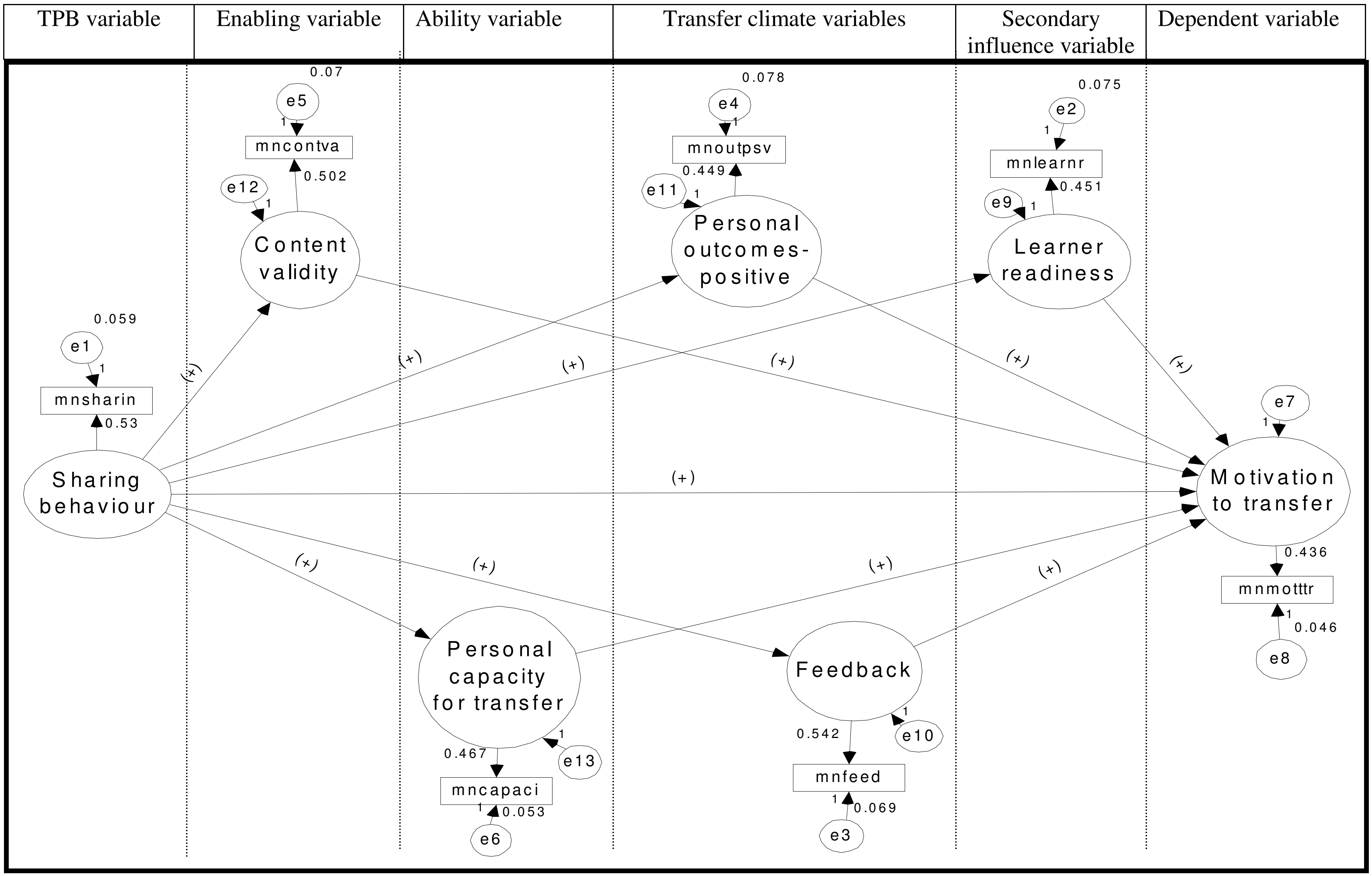
For testing H10, structural equation modelling (SEM) was used because of its advantage in examining direct and indirect relationships simultaneously (via the significant predictors identified in research question three) with *motivation to transfer*, which cannot be done using multiple regression analysis (Hair et al. 1998) (see Chapter 3, section 3.3.3). Based on research question three, the identified significant predictors were two secondary influence variables (*performance-self efficacy*; *learner readiness*), one expected utility variable (*transfer effort-performance expectations*), three transfer climate variables (*feedback*; *personal* *outcomes-positive*; *supervisor sanctions*) and both enabling (*content validity*; *transfer design*) and ability (*personal capacity for transfer*; *opportunity to use*) variables.

According to Tabachnick and Fidell (2001), when modelling with SEM, the sample size required is 10 subjects per estimate parameter. Due to the relatively small sample size obtained in this study (n = 291), it was not sufficient to include all the significant predictors identified in research question three: *sharing behaviour* and *motivation to transfer* into the structural model. Therefore, the researcher selected the variables that had a strong beta value in explaining *motivation to transfer* identified from research question three (see Table 6.16). The selected variables were: one secondary influence variable (*learner readiness*), two transfer climate variables (*feedback; personal outcomes-positive*), one enabling variable (*content validity*) and one ability variable (*personal capacity for transfer*). Then, *sharing behaviour* and *motivation to transfer* were included into the structural model to examine the direct and indirect relationship between *sharing behaviour* (via the selected variables) with *motivation to transfer*. The hypothesised structural model is depicted in Figure 6.1.

The measurement models for *learner readiness*, *feedback*, *personal outcomes-positive*, *content validity*, *personal capacity for transfer*, *sharing behaviour* and *motivation to transfer* were examined and described in Chapter 4. The researcher was satisfied that the measurement models possessed good psychometric properties (validity and reliability). Further, as described in Chapter 3 (see section 3.3.3), the regression coefficient and the measurement error variances for each variable in the structural model was calculated (see Appendix N for the workings). These values were used as fixed parameters in the hypothesised structural model as shown in Figure 6.1. The structural model (Figure 6.1) hypothesised that *sharing behaviour* has a direct influence on *motivation to transfer*, *learner readiness*, *feedback*, *personal outcomes-positive*, *content validity* and *personal capacity* for transfer and indirect influence on *motivation to transfer* via these variables. A mixture of fit indices was used when evaluating the hypothesised structural model. The fit indices utilised were

χ^2,GFI, AGFI, RMSR, TLI, CFI, NFI and RMSEA (see Chapter 3, section 3.3.3). The results are presented next.

Figure 6.1 Hypothesised Structural Model



Evaluating the Hypothesised Structural Model

The hypothesised structural model (see Figure 6.2) clearly provided a poor model fit and poor values as demonstrated by the fit indices (Hair et al. 1998; Kline 2005) displayed in Table 6.20.

Table 6.20 Fit Indices for Hypothesised Structural Model

χ^2 value	158.548	RMSR	0.038
Degrees of freedom	10	TLI	0.510
p value	0.000	CFI	0.767
GFI	0.845	NFI	0.759
AGFI	0.566	RMSEA	0.226

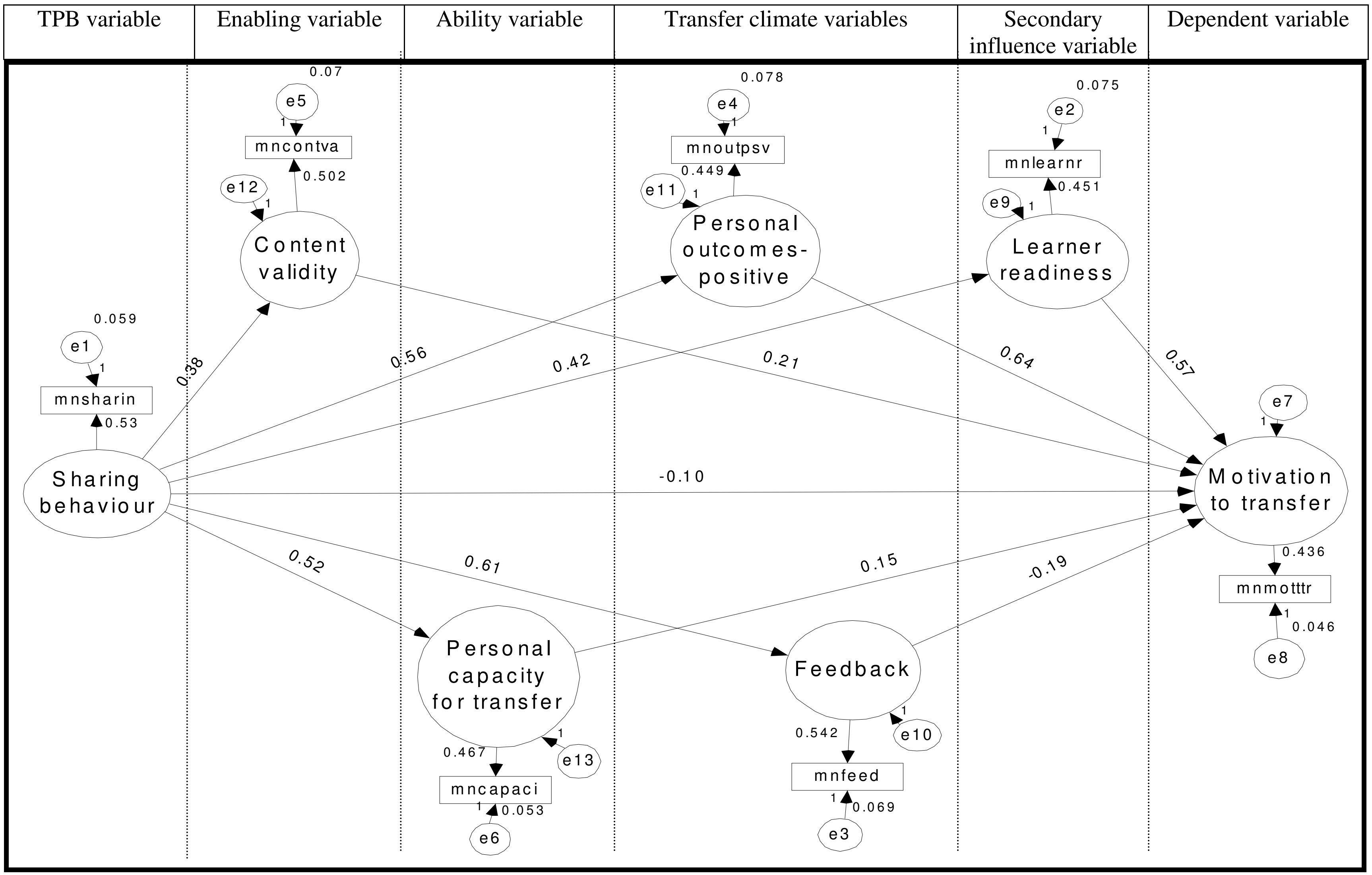
Results also indicated that all relationships in the hypothesised structural model were supported except for the relationship between *sharing behaviour* and *motivation to transfer* (see Table 6.21).

Table 6.21 Results of the Hypothesised Structural Model

From	To	Relationship Sign	Standardised Estimate	t value	Supported Yes/No
Learner readiness	Motivation to transfer	+	0.574	8.920	Yes***
Feedback	Motivation to transfer	+	-0.188	-2.690	Yes*
Personal outcomes-positive	Motivation to transfer	+	0.637	8.331	Yes***
Content validity	Motivation to transfer	+	0.214	3.727	Yes***
Personal capacity for transfer	Motivation to transfer	+	0.15	2.391	Yes**
Sharing behaviour	Motivation to transfer	+	-0.105	-0.976	No
Sharing behaviour	Learner readiness	+	0.419	5.907	Yes***
Sharing behaviour	Feedback	+	0.605	9.665	Yes***
Sharing behaviour	Personal outcomes-positive	+	0.560	8.168	Yes***
Sharing behaviour	Content validity	+	0.384	5.582	Yes***
Sharing behaviour	Personal capacity for transfer	+	0.519	7.974	Yes***

Note: * p=0.01, ** p=0.05, *** p=0.001

Figure 6.2 The Results for the Hypothesised Structural Model



Structural Model Re-specification

Because the hypothesised structural model was not supported by the sample data (poor values demonstrated by the fit indices, see Table 6.20), it was revised in order to improve fit. In transfer of training literature, several studies used SEM to model the conceptual framework in their studies (Facteau et al. 1995; Mathieu et al. 1992; Naquin & Holton 2002; Tracey et al. 2001). Therefore, based on these studies, the model was revised by dropping the non-significant paths and adding other paths to the model (Mathieu et al. 1992; Naquin & Holton 2002) according to two rules:

(1) They can be supported by logic (Arbuckle & Wothe 1999; Facteau et al. 1995; Joreskog & Sorbom); and
(2) They yield significant results (Mathieu et al. 1992).

In this thesis, the non-significant path (from *sharing behaviour* to *motivation to transfer*) was dropped (see Figure 6.2). Then, five additional paths were included into the model. The modification indices (suggested relationships provided by AMOS version 7) were examined and additional paths were added into the model according to the two rules above (Arbuckle & Wothe 1995; Joreskog & Sorbom 1993). The five additional paths and their justifications for inclusion are stated below:

1. *Content validity* to *personal capacity for transfer*.

   This path was included because it is likely that when trainees perceive the training content to reflect their job requirements, they are more capable to transfer training to the job.
2. *Content validity* to *personal outcomes-positive*.

   When trainees perceive the training content to reflect their job requirements, they are more likely to believe that applying training to the job would lead to valued outcomes.
3. *Personal capacity for transfer* to *personal outcomes-positive*.

   When trainees have the capability to transfer training, they are more likely to believe that applying training on the job would lead to valued outcomes.

4. *Personal outcomes-positive* to *feedback*.

When trainees believe that applying training on the job would lead to valued outcomes, they are more likely to believe that they would receive feedback regarding their job performance.

5. *Personal outcomes-positive* to *learner readiness*.

When trainees believe that applying training on the job would lead to valued outcomes, they are more ready to participate in training.

The re-specified model (see Figure 6.3) with the new paths added produced a dramatic improvement in fit indicated by a large drop in the χ^2 statistic from 158.548 to 18.000 and all fit indices improved (GFI, AGFI, NFI, TLI and CFI above the desired 0.90 cut-off; RMSR was below the desired 0.10 cut-off; RMSEA was just slightly above the desired 0.08 cut-off) (Hair et al. 1998; Kline 2005). However, the p value was still significant ($p<0.01$), indicating that the actual and predicted input matrices were still statistically different (Hair et al. 1998) (see Table 6.22).

Table 6.22 Fit Indices for the Re-Specified Model 1

χ^2 value	18.000	RMSR	0.010
Degrees of freedom	6	TLI	0.934
p value	0.006	CFI	0.981
GFI	0.982	NFI	0.973
AGFI	0.915	RMSEA	0.083

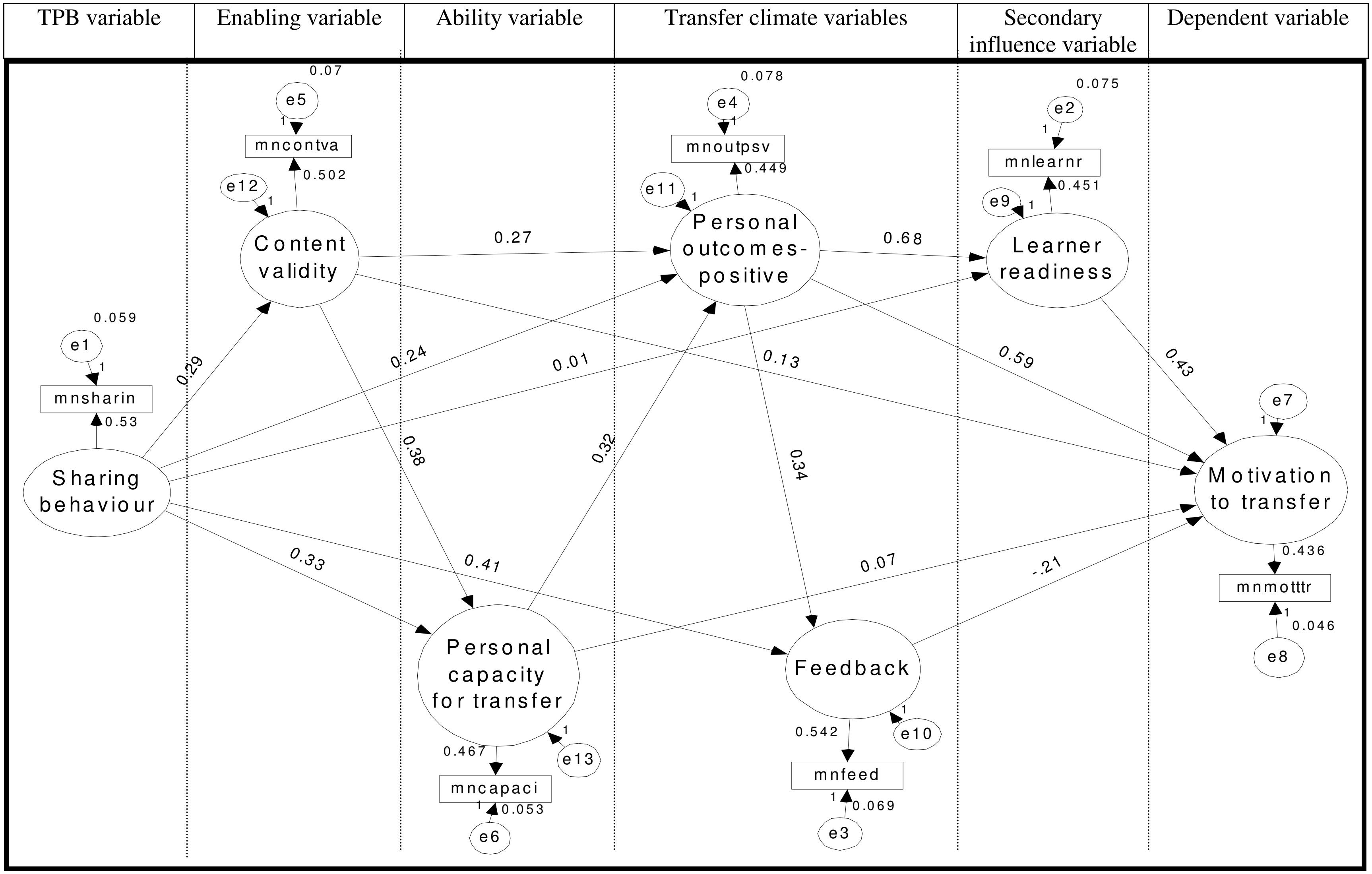
Interestingly, all relationships including the five new paths were significant except the relationship from *sharing behaviour* to *learner readiness* and the relationship from *personal capacity for transfer* to *motivation to transfer*. The results of the relationships for the re-specified model 1 are shown in Table 6.23.

Table 6.23 Results of the Relationships for Re-Specified Model 1

From	To	Relationship Sign	Standardised Estimate	t value	Supported Yes/No
Learner readiness	Motivation to transfer	+	0.433	5.159	Yes***
Feedback	Motivation to transfer	+	-0.213	-3.417	Yes***
Personal outcomes-positive	Motivation to transfer	+	0.587	5.183	Yes***
Personal outcomes-positive	Feedback	+	0.336	4.457	Yes***
Personal outcomes-positive	Learner readiness	+	0.684	8.005	Yes***
Content validity	Motivation to transfer	+	0.133	2.125	Yes**
Content validity	Personal capacity for transfer	+	0.378	5.374	Yes***
Content validity	Personal outcomes-positive	+	0.271	3.459	Yes***
Personal capacity for transfer	Motivation to transfer	+	0.071	1.068	No
Personal capacity for transfer	Personal outcomes-positive	+	0.322	3.834	Yes***
Sharing behaviour	Learner readiness	+	0.007	0.088	No
Sharing behaviour	Feedback	+	0.408	5.597	Yes***
Sharing behaviour	Personal outcomes-positive	+	0.235	3.211	Yes*
Sharing behaviour	Content validity	+	0.293	4.127	Yes***
Sharing behaviour	Personal capacity for transfer	+	0.328	4.823	Yes***

Note: * p=0.01, ** p=0.05, *** p=0.001

Figure 6.3 The Results for Re-specified Model 1



The Final Structural Model

The first revision (Re-Specified Model 1 depicted in Figure 6.3) demonstrated that the model was still significant ($p<0.01$), indicating that the actual and predicted input matrices were still statistically different (Hair et al. 1998). Therefore, the model was again revised by dropping the non-significant paths from *personal capacity for transfer* to *motivation to transfer* and from *sharing behaviour* to *learner readiness*. Then, a new path was added from *feedback* to *learner readiness*. This path was added because it is likely that trainees who receive feedback regarding their job performance are more ready to participate in training.

This time, the second revision (Final Structural Model depicted in Figure 6.4) produced a good model fit to the data indicated by a non-significant p value ($p > 0.05$) and a further drop in χ^2 (Hair et al. 1998). The fit indices were also in the desired range (GFI, AGFI, NFI, TLI, CFI were above the desired 0.90 cut-off; RMSR and RMSEA were below the desired cut-offs 0.10 and 0.08, respectively) (Hair et al. 1998; Kline 2005) (see Table 6.24).

Table 6.24 Fit Indices for the Final Structural Model

χ^2 value	12.782	RMSR	0.009
Degrees of freedom	7	TLI	0.973
p value	0.078	CFI	0.991
GFI	0.987	NFI	0.981
AGFI	0.949	RMSEA	0.053

All the relationships including the new path were statistically significant. The results of the relationships between variables in the final structural model are shown in Table 6.25.

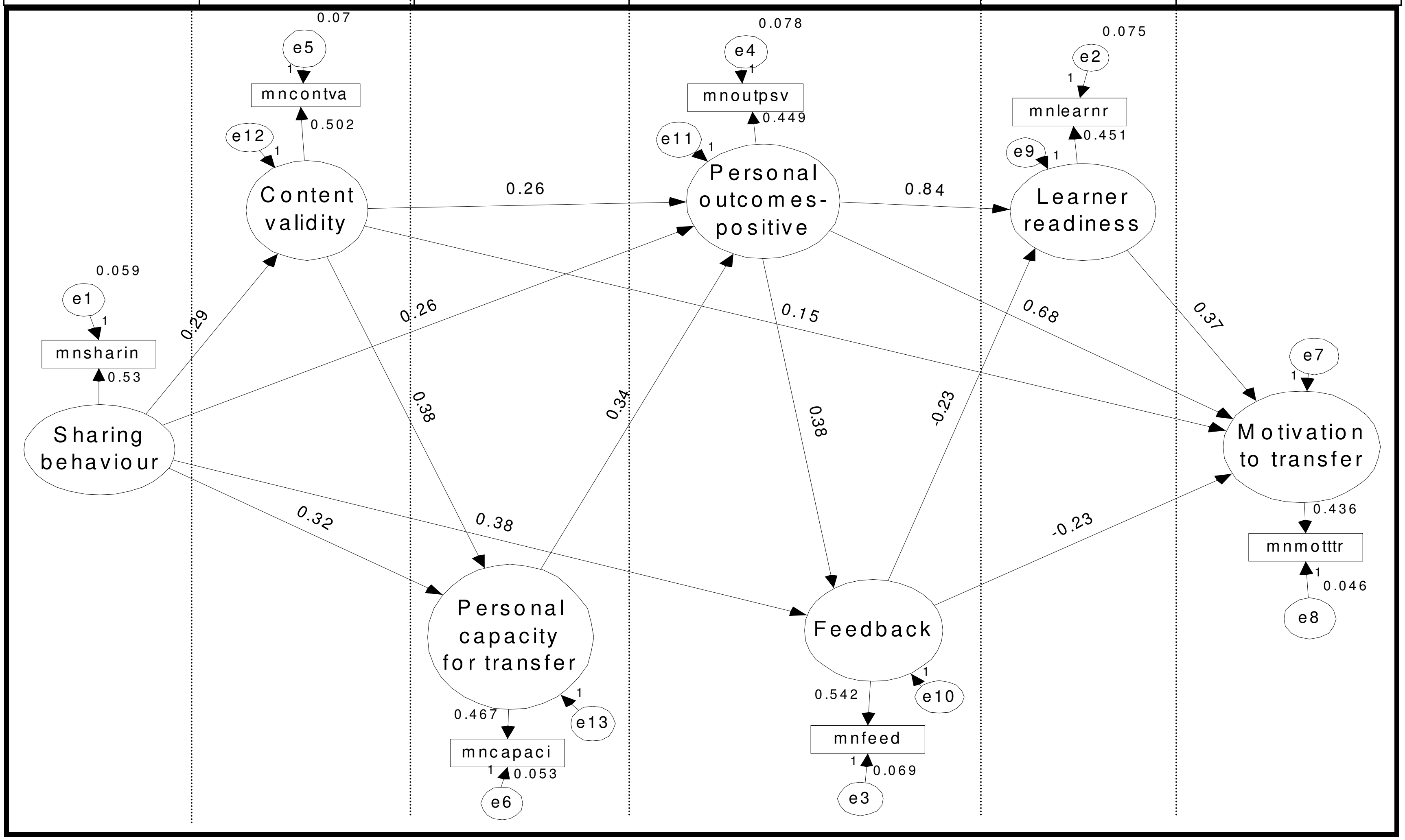
Table 6.25 Results of the Relationships for the Final Structural Model

From	To	Relationship Sign	Standardised Estimate (λ)	t value	Supported Yes/No
Learner readiness	Motivation to transfer	+	0.368	3.647	Yes***
Feedback	Motivation to transfer	+	-0.231	-3.089	Yes*
Feedback	Learner readiness	+	-0.226	-2.457	Yes**
Personal outcomes-positive	Motivation to transfer	+	0.679	5.003	Yes***
Personal outcomes-positive	Feedback	+	0.375	4.756	Yes***
Personal outcomes-positive	Learner readiness	+	0.841	8.606	Yes***
Content validity	Motivation to transfer	+	0.147	2.420	Yes**
Content validity	Personal capacity for transfer	+	0.382	5.445	Yes***
Content validity	Personal outcomes-positive	+	0.257	3.399	Yes***
Personal capacity for transfer	Personal outcomes-positive	+	0.338	4.295	Yes***
Sharing behaviour	Feedback	+	0.375	5.058	Yes***
Sharing behaviour	Personal outcomes-positive	+	0.261	3.764	Yes***
Sharing behaviour	Content validity	+	0.292	4.116	Yes***
Sharing behaviour	Personal capacity for transfer	+	0.324	4.759	Yes***

Note: * p=0.01, ** p=0.05, *** p=0.001

Figure 6.4 The Results for the Final Structural Model

TPB variable	Enabling variable	Ability variable	Transfer climate variables	Secondary influence variable	Dependent variable



The final structural model (figure 6.4) revealed that *sharing behaviour* did not have a direct relationship with *motivation to transfer*. Therefore, **H10 was not supported for a direct relationship between *sharing behaviour* and *motivation to transfer***. However, **H10 was supported for an indirect relationship between *sharing behaviour* and *motivation to transfer*.** Results showed that *sharing behaviour* had an indirect relationship with *motivation to transfer* via its relationship with *personal-outcomes positive* (λ = 0.26), *feedback* (λ = 0.38), *content validity* (λ = 0.29) and *personal capacity for transfer* (λ = 0.32). The results obtained from the final structural model are discussed below.

6.2.8 The direct and indirect relationships between *sharing behaviour* and *motivation to transfer*

Structural equation modelling (SEM) was used to answer research question six. Through SEM the researcher was able to examine the direct and indirect relationships (via the significant predictors identified in research question three) between *sharing behaviour* and *motivation to transfer* simultaneously, which cannot be done using multiple regression analysis (Hair et al. 1998). The significant predictors included in the final structural model (see Figure 6.4) comprise: *sharing behaviour, learner readiness*, *feedback*, *personal outcomes-positive*, *content validity* and *personal capacity for transfer* (see section 6.2.4 for the justification for the selection of these variables).

As described earlier in research question four, Pearson correlation analysis showed that *sharing behaviour* was significantly correlated with *motivation to transfer*. When investigating the direct and indirect relationships (via *learner readiness*, *feedback*, *personal outcomes-positive*, *content validity* and *personal capacity for transfer*) between *sharing behaviour* and *motivation to transfer* simultaneously, SEM revealed that *sharing behaviour* did not have a direct relationship with *motivation to transfer*. However, the results showed that *sharing behaviour* did have an indirect relationship with *motivation to transfer* via its relationship with *personal-outcomes positive*, *feedback* and *content validity*. Each of these key relationships will now be considered:

The Effect of Sharing Behaviour in the Final Structural Model

Sharing behaviour had an indirect influence on *motivation to transfer* via its relationship with *personal outcomes-positive*. This influence can be described as being in a significant, positive direction and with a moderate level effect on *personal outcomes-positive*. On the other hand, *personal outcomes-positive* itself, was in a significant, positive direction with a strong effect on *motivation to transfer*. These results suggest that when trainees share the learned knowledge and skills, the more they believe that applying training will lead to valued outcomes, the more this will influence their motivation to use training on the job. Although the strength of the relationship between *sharing behaviour* and *personal outcomes-positive* was moderate, it was significant at the 0.001 level. While many studies have shown the significant influence of *personal outcomes-positive* on training transfer (Bates 2001; Bates & Holton 1999; Holton et al. 2000; Holton et al. 1997; Tracey et al. 1995) and *motivation to transfer* (Holton 1996; Kontoghiorghes 2001), none had attempted to clarify the factors which contribute to the formation of *personal outcomes-positive*. This thesis has made a key contribution to this debate in the literature by showing the direct effect of *sharing behaviour* on *personal outcomes-positive*, which in turn, influences *motivation to transfer*. The implications for this relationship in HRD practice is discussed in Chapter 7.

Results also showed that *sharing behaviour* had an indirect relationship with *motivation to transfer* via its relationship with *feedback*. *Sharing behaviour* can be described as being in a significant, positive direction and with a moderate level effect on *feedback*. It is relevant that *feedback* itself had a significant, moderate, but negative directional relationship with *motivation to transfer*. The negative directional effect suggests the possibility that one or more suppresser variables were present as described by Cohen and Cohen (1983). In this study, *personal outcomes-positive* has a strong effect (λ = 0.68) on motivation to transfer and feedback (λ = 0.23) has a moderate effect on motivation to transfer. Therefore, personal outcomes-positive acting as a suppressor, suppressed the relationship between *feedback and motivation to transfer*. This is the reason why *feedback* had a negative directional relationship *with motivation to transfer.*

In transfer of training literature, three studies found the presence of suppressor effect (Cheng & Ho 2001; Facteau et al. 1995; Bates et al. 2000). For example, in Facteau et al.'s (1995) study, the authors obtained three negative directional relationships because of suppressor effects: supervisor support with pre-training motivation, subordinate support with pre-training motivation and top management support with pre-training motivation. The authors argued that supervisor support, subordinate support and top management support did not appear to have direct negative effects on pre-training motivation and suggested positive directional relationships instead of negative one (p.21).

In Chapter 5, research question one revealed that trainees in this study indicated a moderate level of *feedback* and a strong level of *motivation to transfer* (see Chapter 5, section 5.4.1 and 5.4.2). This suggests overall, a positive directional relationship between these two variables rather then negative ones. Therefore, the researcher considers the relationship between *feedback* and *motivation to transfer* as being positive. These results suggest that when trainees share the learned knowledge and skills, the more they believe that they would receive *feedback* regarding their job performance, the more this will influence their *motivation to transfer* training on the job. In the transfer literature, researchers have argued that when trainees are given *feedback* regarding their job performance after attending training, it helps them to apply what they have learned on the job (Clarke 2002; Holton et al. 1997; Reber & Wallin 1984; Rouiller & Goldstein 1993; Tracey et al. 1995) (Chapter 2, section 2.5.1). However, research examining the factors that could contribute to the formation of *feedback* has been neglected. Therefore, again, this thesis contributes to the transfer literature by showing the direct influence of *sharing behaviour* on *feedback*, which in turn, influences *motivation to transfer*. This point is taken up in Chapter 7 as it has important ramifications for HRD managers in terms of ensuring supervisors provide meaningful feedback to trainees returning to work.

SEM results also showed that *sharing behaviour* had an indirect relationship with *motivation to transfer* via its relationship with *content validity*. *Sharing behaviour* had a significant, moderate and positive relationship with *content validity*. On the other hand, *content validity* had a significant, moderate and positive relationship with *motivation to transfer*. These results suggest that when trainees share the learned knowledge and skills obtained from training, the more the training content reflects trainees' job requirements, the more it influences their *motivation to transfer*. This is another interesting finding because in the transfer literature, many studies have shown the direct effect of *content validity* on *motivation to transfer* (Clark et al. 1993; Holton et al. 1997; Seyler et al. 1998;) and training transfer (Axtell et al. 1997; Bates et al. 2000; Holton et al. 2000) (see Chapter 2, section 2.5.1). However, none had attempted to clarify the factors that could contribute to the formation of *content validity*. This thesis has demonstrated that *sharing behaviour* is a potential factor that contributes to the formation of *content validity*, which in turn, influences *motivation to transfer*. This point is taken up in Chapter 7.

It is also important to highlight in this discussion the direct relationship of *sharing behaviour* with *personal capacity for transfer*. Although SEM results showed that *personal capacity for transfer* had no direct relationship with *motivation to transfer*, it did demonstrate that *personal capacity for transfer* had a direct relationship with *personal outcomes-positive*, which in turn, influences *motivation to transfer*. *Sharing behaviour* had a significant, positive and moderate relationship with *personal capacity for transfer*. On the other hand, *personal capacity for transfer* had a significant, positive and moderate relationship with *personal-outcomes positive,* which in turn, influences *motivation to transfer*. In the transfer literature, researchers have acknowledged that *personal capacity for transfer* is an important determinant of training transfer (Chen 2003; Holton et al. 2000; Holton et al 1997; Yamnill 2001) (Chapter 2, section 2.4.2). However, empirical research examining the factors that contribute to the formation of *personal capacity for transfer* is lacking. This thesis contributes to a greater understanding of *sharing behaviour* by showing that *sharing behaviour* has a direct influence on *personal capacity for transfer*. Further, this thesis also demonstrates that *personal capacity for transfer* has a direct influence on *personal outcomes-positive*, which in turn, influences *motivation to transfer*. These findings have important implications for the conduct of workplace training courses and this is discussed in Chapter 7. In the next section, the Chapter describes the evolution of the final structural model from its initial conception described in Chapter 3 to its final form.

6.3 The Evolution of the Final Structural Model

The conceptual framework developed in this thesis (see Chapter 1, Figure 1.1) was constructed from an adaptation of the LTSI model (Holton et al. 2000), the HRD Evaluation Research and Measurement Model (1996) and the TPB theory (Ajzen 1991) (see Chapter 3, section 3.2). The conceptual framework hypothesised that *motivation to transfer* is influenced by secondary influence variables (*performance-self efficacy, learner readiness*), expected utility variables (*transfer effort-performance expectations, performance-outcomes expectations*), transfer climate variables (*feedback*, *peer support*, *supervisor support*, *openness to change*, *personal outcomes-positive*, *personal outcomes-negative*, *supervisor sanctions*), enabling variables (*content validity*, *transfer design*), ability variables (*personal capacity for transfer*, *opportunity to use*) and *sharing behaviour*. Further, the conceptual framework also hypothesised that *intention to share* is influenced by *attitude*, *subjective norm* and *perceived behavioural control* toward knowledge sharing.

Research questions one and two revealed that the following variables operated at a strong level across the three training types and trainee demographics: *motivation to transfer*; *learner readiness* and *performance-self efficacy* (secondary influence variables); *transfer effort-performance expectations* (expected utility variable); *personal outcomes-positive* (transfer climate variable); *content validity* and *transfer design* (enabling variables); *personal capacity for transfer* and *opportunity to use* (ability variables); *sharing behaviour*, *intention to share*, *attitude*, *subjective norm and perceived behavioural* control toward knowledge sharing (TPB variables). Further, a number of variables operated at a moderate level: *feedback*, *peer support*, *supervisor support* and *supervisor sanctions* (transfer climate variables). Finally, some variables operated at a poor level: *performance-outcomes expectations* (expected utility variable); *openness to change* and *personal outcomes-negative* (transfer climate variables) and *opportunity to use* (ability variable).

While research questions one and two provide an indication that those variables that are strong are inter-related with *motivation to transfer*, research question three confirmed that the following variables were significant in explaining the variation in *motivation to transfer*: *learner readiness* and *performance-self efficacy* (secondary influence variables), *transfer effort-performance expectations* (expected utility variable); *feedback*, *personal outcomes-positive* and *supervisor sanctions* (transfer climate variables); *content validity* and *transfer design* (enabling variables) and *personal capacity for transfer* and *opportunity to use* (ability variables).

Further, research question four then revealed that *sharing behaviour* has a positive relationship with *motivation to transfer*. This relationship was further supported when research question five revealed that *attitude*, *subjective norm* and *perceived behavioural* control were significant in explaining the variation in intention to share.

Following this, research question six explored the direct and indirect relationships between *sharing behaviour* (via the significant predictors identified in research question three) with *motivation to transfer*. As explained earlier, because the sample size obtained in this study was not sufficient to model all the significant predictors identified in research question three, the researcher selected the variables that had a strong beta value in explaining the variance in *motivation to transfer* identified from research question three (see Table 6.16). Then, *sharing behaviou*r and *motivation to transfer* were included into the structural model to examine the direct and indirect relationships between *sharing behaviour* (via the selected variables) with *motivation to transfer* (see Figure 6.1).

The hypothesised structural model was not supported by the sample data. It was revised by dropping the non-significant paths and adding new additional paths into the structural model in order to improve fit (see Figure 6.2, 6.3 and 6.4). The final structural model showed that *sharing behaviour* had an indirect relationship with *motivation to transfer* via its relationship with *personal outcomes-positive*, *feedback*, *content validity* and *personal capacity for transfer*, which in turn, influences *motivation to transfer*. Based on the findings, it is argued that *sharing* *behaviour* has an influence on trainees' *motivation to transfer* training. Although not all significant predictors identified in research question three were included in the final structural model, it is argued that the limitation does not jeopardise the findings derived from this thesis. Overall, the contribution of this model to HRD theory by this study furthers understanding of the importance of *sharing behaviour* in *motivation to transfer* training.

6.4 Discussion

This Chapter confirmed that both secondary influence variables (*learner readiness* and *performance-self efficacy*), one expected utility variable (*transfer effort-performance expectations*), three transfer climate variables (*feedback*, *personal outcomes-positive* and *supervisor sanctions*), both enabling variables (*content validity* and *transfer design*) and ability variables (*personal capacity for transfer* and *opportunity to use*) were significant in explaining the variation in *motivation to transfer*. The secondary influence variables (*learner readiness* and *performance-self efficacy*) and the transfer climate variables (*personal outcomes-positive*, f*eedback* and *supervisor sanctions*) are the most important variables in understanding trainees' *motivation to transfer* training because these variables explained the highest variance.

Sharing behaviour was found to be linked with *motivation to transfer* training. Further support was provided when the Chapter revealed that trainees in this study had a positive *attitude*, *subjective norm* and *perceived behavioural control* toward *intention to share*. An exploration of the direct and indirect influence of *sharing behaviour*, in combination with secondary influence variables, transfer climate variables, one enabling variable and ability variable on *motivation to transfer* was conducted. However, due to the sample size obtained in this study, only the significant predictors with the strongest beta value were selected into the structural model. The selected variables were *learner readiness* (secondary influence variable), *personal outcomes-positive* and *feedback* (transfer climate variables), *content validity* (enabling variable) and *personal capacity for transfer* (ability variable). The final structural model showed that *sharing behaviour* had an indirect influence on *motivation to transfer* indirectly via its relationship with *personal outcomes-positive*, *feedback*, *content validity* and *personal capacity for transfer*, which in turn, influences *motivation to transfer*.

6.5 Summary

Chapter 5 and 6 presented the answers to the six research questions developed in this thesis. This Chapter presented the testing and results of the five hypotheses belonging to research question three (H3, H4, H5, H6, H7; and one hypothesis belonging to research questions four (H8), five (H9) and six (H10), respectively. Chapter 6 also chronicled the development of the structural model derived from the findings of this study. The model indicates that *sharing behaviour* plays a key indirect role in facilitating motivation to transfer as well as operating directly through *personal outcomes-positive*, *feedback*, *content validity* and *personal capacity for transfer*. In the next Chapter, the implications of these findings for HRD theory and practice are discussed as well as the limitations of this study and recommendations for future research.

CHAPTER 7

IMPLICATIONS FOR HRD PRACTISE, THEORY, RESEARCH LIMITATIONS, GENERALISABILITY AND DIRECTIONS FOR FUTURE RESEARCH

7.1 Introduction

Chapters 5 and 6 discussed the findings obtained for the six research questions through the testing of their 10 related hypotheses. Chapter 6 also documented the evolution of the final structural model which was developed in this study. The structural model provides HRD researchers with a greater insight into the operation of motivation to transfer and the factors directly and indirectly related to it, in the context of the Malaysian public sector. This Chapter brings together the findings of this study in a discussion of their implications for HRD practice and theory. The Chapter then considers the research limitations, the generalisability of findings and directions for future research in this field.

7.2 Implications for HRD Practise

There has been little research on employee training in Malaysia, and, in particular the gap in transfer of training research is significant. This study has sought to fill the gap through examining the influences of motivation to transfer training. These factors were described in detail in Chapters 5 and 6 and depicted diagrammatically in Figure 6.4. It is important now to consider how HRD professionals in Malaysia and elsewhere might use these findings to improve transfer of training and perhaps contribute to a greater return on investment for the training effort. The following section discusses the implications for HRD practice in the Malaysian public sector based on the points highlighted in Chapter 5 and 6.

7.2.1 The Importance of Diagnosing Transfer of Training Variables

According to Holton et al. (2000: 356), organisations should be working towards understanding the key factors affecting transfer of training and actively promoting these while intervening to eliminate barriers which inhibit transfer. This thesis seeks to contribute to such a goal by turning now to the implications of the findings of this study for HRD practice, particularly in the context of the Malaysian public sector.

Secondary Influence Variables

Chapter 5 revealed that trainees demonstrated a strong level of *performance-self efficacy* and *learner readiness* across the three training types and demographics (see Chapter 5, sections 5.3.1; 5.3.2). In the transfer literature, personality characteristics such as *learner readiness* and *performance-self efficacy* have been shown to be key contributors in explaining transfer of training (Baldwin et al. 1991; Gist 1989; Gist et al. 1989; Gist et al. 1991; Hicks & Klimoski 1987; Tannenbaum et al. 1991) (see Chapter 2, section 2.5.1). For the Malaysian public sector, this means that trainees already demonstrate these two personality traits which are required to contribute to transfer of training. With regard to further enhancing *performance-self efficacy*, HRD managers must ensure that trainees are informed that the purpose of training is to try to improve trainee's job performance rather than being seen as an opportunity to identify areas in which trainees are competent (Noe 2005). In other words, trainees who understand that the training will directly enhance their job performance will respond with greater *performance-self efficacy*. Another avenue for HRD managers to encourage *performance-self efficacy* is to involve trainees in self development programs as part of their job training as these boost self esteem (Holton et al. 2000).

Chapter 5 also revealed that, whilst all trainees indicated high levels of *learner readiness*, it was more pronounced in senior trainees than in junior trainees. It was also found that trainees from management positions indicated higher levels of learner readiness than trainees from support group positions. Therefore, HRD managers in the Malaysian public sector need to pay particular attention to junior trainees and trainees from support groups to enhance the level of their readiness to learn. This could be achieved firstly, through providing them with more freedom to choose training they would like to attend. Several studies have shown that when trainees are provided with a choice of training, they are more likely to believe that the training program is appropriate for them to take and they are then better able to profit from it, consequently increasing their readiness to participate in training (Baldwin et al. 1991; Hicks & Klimoski 1987; Ryman & Biersner 1975) (see Chapter 2, section 2.5.2). Further, HRD managers must understand that trainees are adult learners and adults need to know why they are learning something; they have a need to be self-directed (Knowles 1990; Knowles et al. 1998). HRD managers need to find a way to increase training course choice whilst still maintaining the regime of courses which must be attended by public sector staff.

Building on the fact that older employees have greater *learner readiness* than younger ones, HRD managers might consider instilling coaching behaviours in appropriate senior and managerial staff so that they are better able to pass on their *learner readiness* to more junior or support staff colleagues. Coaching involves a close, intimate relationship between the coach and the trainee (Thach & Heinselman 1999). Researchers have suggested that coaching can lead to positive behaviour change (Thach & Heinselman 1999) and performance improvement (Smither, London, Flautt, Vargas & Kucine 2003). For this reason, at least some senior and management staff members could play their role as coaches to help trainees reach their highest level of performance by determining their training needs and discussing a plan for trainees' career development (Mosley, Megginson & Pietri 2005). These staff members are in a good position to develop *learner readiness* amongst the trainees.

Finally, *learner readiness* and *performance-self efficacy* may also be achieved through project-based training in a teamwork setting. This type of training has been reported as successful in achieving transfer of training as it enhances a trainee's understanding of the subject as well as developing team-working skills such as better communication as well as project management skills (Bleimann 2004)

Expected Utility Variables

Vroom (1964) postulated that individuals will be more motivated to transfer training to the job when they believe that their effort invested in the training program will result in mastery of the training content (*transfer effort-performance expectations*) and good performance in the training program will lead to desirable outcomes (*performance-outcomes expectations*) (see Chapter 2, section 2.5.1). The findings of this study revealed that trainees across the three training types and demographics indicated strong levels of *transfer effort-performance expectations* but poor levels of *performance-outcomes expectations* (see Chapter 5, section 5.4.1). In other words, trainees believe that their efforts to transfer training would lead to greater job performance (*transfer effort-performance expectations*) but they did not expect to be rewarded (extrinsically) for their improved performance (*performance-outcomes expectations*). Chapter 6 (see section 6.2.2) also revealed that *transfer effort-performance expectations* is significant in explaining trainees' *motivation to transfer* but not *performance-outcomes expectations*. This finding reflects the fact that in the Malaysian public sector rewards such as job promotion or salary increments are not given on the basis of successful completion of training. Instead, these workers are motivated by intrinsic rewards such as the satisfaction of knowing that their work has been done well.

The phenomenon is not confined to Malaysia. In the transfer of training literature, several public sector based studies in the United States found that intrinsic outcomes proved to be more important to workers than extrinsic ones (Bates & Holton 1999; Tracey et al. 1995) (see Chapter 2, section 2.5.1). The implication of this finding to Malaysian public sector HRD managers is to use intrinsic rewards to enhance trainees' expectations regarding desirable outcomes. In other words, rather than have trainees believe that no reward is expected as an outcome, a more explicit intrinsic outcome should be promoted such as acknowledging that the training is linked with greater levels of trainee satisfaction, trainee performance and so forth. A range of extrinsic rewards which do not have the costs associated with traditional extrinsic rewards can also be employed. These might involve praise and recognition by supervisors in the forms of being allocated interesting, meaningful and challenging tasks (Poon & Idris 1985) (see Chapter 2, section 2.5.1). HRD managers are advised to include supervisors and managers in the development of a post training plan for the return to work of trainees. Supervisors can then organise in advance, the sorts of post training tasks which can be offered to trainees and the sort of structured feedback and support necessary to build on trainee's sense of intrinsic rewards. This issue is taken up in the discussion on transfer climate, below and in Chapter 7.

The design of the training course should also provide the basis for trainees themselves to think through the types of tasks which they might negotiate with their supervisors to perform on their return to work. This will enhance trainees' opportunities to apply the skills and knowledge learned in the classroom. Clearly, a form of on the job training will also allow supervisors and managers to oversee the trainees' practise of their new skills or knowledge. Finally, in some cases it may be possible for trainees to complete a final report on their training which reflects on the extent to which they were able to transfer their training and make suggestions for the future improvement of training course design. This will allow them to reflect on their *performance-self efficacy* and *learner readiness*, thus increasing their awareness of these factors which should then flow through to an increased *motivation to transfer* their training.

Transfer Climate Variables

A number of variables lying outside the training classroom have been found to affect behaviour change in trainees. It has been hypothesised that trainees who work in conditions supportive of training transfer are more likely to transfer their learning to the job (Holton 1996). Chapter 5 revealed that the transfer climate in the Malaysian public sector is not at a high enough level to promote training transfer. In this study, although trainees across the three training types and demographics had strong levels of *personal outcomes-positive*, a number of other factors countered the effect. For instance, they perceived support from peers and supervisors as being moderate and they reported receiving moderate sanctions from supervisors and poor levels of *personal outcomes-negative* and *openness to change* (see Chapter 5, section 5.4.1).

In the literature, a number of studies have suggested that transfer climate is important for transfer of training to occur. These studies were canvassed in Chapter 2 (section 2.5.1). However, others have also acknowledged that transfer climate is unique, with each organisation having their own (Facteau et al. 2001; Holton et al. 2000; Van Der Klink et al. 2001) (see Chapter 2, section 2.5.1). In this thesis, Chapter 6 confirmed that *feedback*, *personal outcomes-positive* and *supervisor sanctions* were the most important transfer climate variables in explaining trainees' *motivation to transfer*. Therefore, HRD managers in the Malaysian public sector should give serious attention to improving these transfer climate variables if they want to see their trainees apply training on the job. The perception of inadequate or negative feedback and lack of support are serious detractors from transfer of training. HRD managers might consider engaging in discussions with supervisors and managers in the trainee's workplace on mechanisms to remove punishment or discouragement from using the learned skills and behaviours. Second, supervisors and managers may require training themselves in ways to positive reinforce the performance of trainees in the workplace through encouragement, praise or the allocation of specific tasks related to the training. As discussed earlier in the Chapter, this might include forming a plan for the return to work of trainees. A positive and supportive work environment will assist in enhancing a trainee's own sense of intrinsic reward for successfully completing the training program.

These variables raise the importance of the effect of managers and supervisors in ensuring returns on investment through training that is followed through in the workplace. As discussed above, HRD managers might wish to consider a formal role for managers or supervisors through an on the job learning component of the training program. On the job training can optimise transfer of training if supervisors learn the principles of providing feedback on performance. A training role for supervisors will also provide them with an overview of training course design, objectives and assessment requirements (Bleimann, 2004).

Enabling Variables

Content validity (trainees judge training content to accurately reflect job requirements) and *transfer design* (training has been designed to provide ability to transfer learning to the job and instructions match job requirements) were found by Holton et al. (1997) to be two variables with the potential to affect transfer of training. The results of this study presented in Chapter 5 revealed that the training programs offered by the National Institute of Public Administration in Malaysia were rated strongly in terms of *content validity* and *transfer design*. Chapter 6 then confirmed that *content validity* and *transfer design* were significant in explaining the variation in *motivation to transfer*. The findings provide an important confirmation for HRD managers in the Malaysian public sector that their training programs reflect trainees' job requirements and that this training is currently delivered in a way which gives trainees the ability to transfer training.

In order to maintain this position into the future, HRD managers should ensure that new courses are designed with these factors in mind. New course design should closely match the requirements of the work tasks required of the job in order to be effective instruments of transfer of training (see Chapter 2, section 2.5.4). Second, the periodic review of existing courses should take into account the extent to which trainees require the training for their work. Changes to work tasks and job routines should then be noted and courses updated accordingly. This would also be an opportunity to involve supervisors and managers, particularly if they have a role in on the job training as described earlier. The participation of supervisors at the design stage of the training course could assist in building their support of trainees undertaking the courses in question.

Ability Variables

Ability has been described as the general capacities related to the performance of a set of tasks (Fleishman 1972). It has been found to interact with motivation to enhance performance outcomes. Chapter 5 revealed that trainees in this study indicated strong levels of *personal capacity for transfer* but at the same time had poor levels of *opportunity to use* training on the job. In the literature, a number of studies had suggested that *personal capacity for transfer* was an important determinant of training transfer (Holton et al. 2000; Holton et al. 20003) and *opportunity to use* was described as a significant predictor of *motivation to transfer* (Seyler et al. 1998) and associated positively with training transfer (Awoniyi et al. 2002; Lim & Johnson 2002; Tracey et al. 1995). Chapter 6 confirmed that *personal capacity for transfer* and *opportunity to use* were significant in explaining the variation in *motivation to transfer* in this study.

The findings are important for HRD managers in the Malaysian public sector. First, the fact that Malaysian government trainees have strong levels of *personal capacity for transfer* indicates that they are ready to transfer their training, and they should be given sufficient opportunities to do so. Second, because *opportunity to use* was rated poorly, attention should be given to ensure that trainees are provided with adequate resources (for instance, financial or equipment) as well as appropriate tasks on the job to enable them to use training. The implication of this finding is that HRD managers need to liaise with supervisors and managers from the trainee's workplace to explain the significance of the *opportunity to use* their training in enhancing transfer of training. As described above, transfer of training can be enhanced both by trainees negotiating with their supervisors, to perform some tasks in which to practise their new skills or through the involvement of supervisors in the post training design (which could involve an on the job component).

Together, the findings of this study impact on the HRD function at two broad stages: prior to training and when trainees return to work. In the latter section of this chapter, the researcher further discusses the findings into activities, which can be conducted by an HRD manager in these two phases of training (see pg. 230).

7.2.2 The Influence of Sharing Behaviour on Motivation to Transfer

The concept of knowledge sharing has been neglected in research on transfer of training and very little is known of the subject in the context of the Malaysian public sector. This thesis set out to bridge the gap in the research literature by including knowledge *sharing behaviour* in the model for investigating *motivation to transfer* training. Over the years, HRD researchers have acknowledged that the role of training has changed from a focus on programs to a broader focus on learning and creating and sharing knowledge (Martocchio & Baldwin 1997; Noe 2005; Noe, Hollenbeck, Gerhart & Wright 2004). Employees are expected to acquire new skills and knowledge, apply them on the job and share this information with fellow workers (Noe 2005). This study tested the knowledge sharing factors from the Theory of Planned Behaviour (Ajzen, 1991). Chapter 5 explored the TPB variables across the three training types (general training; management/leadership training; computer training) and Chapter 6 investigated trainees' *attitudes*, *subjective norms* and *perceived behavioural control* toward knowledge sharing and the relationship between *sharing behaviour* and *motivation to transfer*. The implications of the findings of this study with respect to *sharing behaviour* are discussed next.

Knowledge Sharing Behaviour – A Potential Transfer Factor

Chapter 6 revealed that *sharing behaviour* has a positive relationship with *motivation to transfer*. That means, the more trainees share the learned knowledge and skills in the workplace, the stronger will be their *motivation to transfer* training. Further support for the potential of *sharing behaviour* in motivating a trainee to transfer training was provided in Chapter 5 which revealed that trainees across the three training types and demographics indicated strong levels of: *intention to share*, *attitude*, *subjective norm* and *perceived behavioural control* toward knowledge sharing. Ajzen (1991) postulated that an individual's intention to perform a behaviour is a combination of his or her attitude toward performing the behaviour, the prevailing subjective norms and the perceived behavioural controls on the individual (see Chapter 2, section 2.7). These findings were confirmed in Chapter 6 of this thesis which found that these variables were significant in explaining the variation in *intention to share.* Further, it was found that *intention to share* was correlated significantly to *sharing behaviour*.

Given the strong relationship between *intention to share* and knowledge *sharing behaviour*, HRD managers should intervene to instil in trainees an expectation that they will have to share their knowledge back on the job. This will create the expectation and build the *intention to share*. Such a result may be achieved through post training tasks such as coaching of co-workers or through trainees presenting some aspect of the learned training when back at work. An on the job component of the training course which combines coaching co-workers under the encouragement of a supervisor could also assist in strengthening the trainee's intention to share.

Whilst the knowledge sharing variables were rated highly by respondents in this study, it is nevertheless pertinent to consider some of the HRD implications for ensuring that: *attitude*, *subjective norm* and *perceived behavioural control* toward knowledge sharing are enhanced. Trainees' *attitudes* toward knowledge sharing can be assisted through an organisation's culture and reward system. First, organisational culture can be supportive of transfer or not. Schein (1985) defined culture as the shared values, beliefs and practices of the people in the organisation. Following this definition, organisations in the Malaysian public sector would be wise to invest in a knowledge sharing culture where employees share the learned knowledge and skills because they see it as natural rather than as something they are forced to do. This could be achieved through a reward system where employees are encouraged to make knowledge sharing visible. Teamwork and other collaborative types of working require knowledge sharing to be successful. In creating these forms of work, the trainees and their supervisors will help to create the *subjective norm* of knowledge sharing in the workplace.

Chapter 5 also revealed that the female trainees have better perceptions about the role of peers and supervisors in reinforcing *sharing behaviour* than do male trainees. HRD managers could use this information to provide more assistance to trainees' supervisors to help them in encouraging the efforts of male trainees to share knowledge in the workplace. Clearly, supervisors are seen by their staff members as the person responsible for co-ordinating and directing resources and are in the position to encourage employees to share knowledge in the workplace (Lin & Lee 2004). The sort of support to supervisors give could be in the form of structured feedback or as described earlier, they may conduct on the job training for returning trainees. It is arguable that the structuring of feedback into a routinised task will ensure that both male and female trainees receive equal and consistent information about their performance.

Finally, with regard to *perceived behavioural control* toward knowledge sharing, this thesis found that trainees who perceived knowledge sharing as easy to perform are more likely to share their knowledge. It is therefore central to the success of knowledge sharing in the workplace that trainees are provided with the opportunity to share the learned knowledge and skills. Such opportunity to share may include giving trainees the task of presenting to their colleagues what they have learned in the training or giving them the opportunity to teach their colleagues what they have learned from the training in a range of selected tasks. Again, project team work may be useful to get a trainee to work with a small team in an exercise covered previously in training so that the trainee may share his or her knowledge or skills in a collaborative environment.

Knowledge sharing as part of an organisational culture also requires the development of shared resources. In terms of training learned in the workplace, it is suggested here that HRD manager should liaise with their information technology department to develop a system that allows employees the facility to access, store and share knowledge. This may include the information listing what employees do, how they can be contacted and the type of knowledge they have. Research has suggested the value of such system to facilitate knowledge sharing among employees in the workplace (Stoddart 2001; Van Aalst & Van Der Mast 2002; Song 2002).

The Indirect Influence of Sharing Behaviour on Motivation to Transfer

The final structural model developed in this thesis (see Chapter 6, Figure 6.4) revealed that *sharing behaviour* is an important antecedent that contributes to the formation of *content validity*, *personal outcomes-positive*, *feedback* and *personal capacity for transfer*, which in turn, influences *motivation to transfer*. With regard to *content validity*, a key aspect of training effectiveness is formulating a training program that directly addresses job-performance requirements. A training program which is content valid has been suggested by several researchers as one which gives rise to transfer of training because it is perceived to facilitate workplace goals such as increased productivity, reduced errors or better problem-solving skills (Clark et al. 1993; Holton et al. 1997). As *sharing behaviour* had a significant positive effect on *content validity*, this thesis suggests that trainees should be invited to participate in the design and implementation of training. Trainees may be involved in formulating a strategy on how sharing can facilitate training to meet its objectives. This might involve allowing trainees to suggest possible work-related projects or tasks which may be used as the mechanism for *sharing behaviour* to occur.

The literature on transfer suggests that training is effective when the application of knowledge and skills learned leads to *personal outcomes-positive* such as pay increments or job promotions. Research has indicated that employees will share more to the extent that they perceive their organisation gives them credit for doing so (Burgess 2005; Gupta & Govindarajan 2000; Pan & Scarbrough 1998). Because trainees in this thesis perceived *personal outcomes-positive* as being intrinsic (for instance, self satisfaction or pride of work achieved), it is argued in this thesis that public sector workers need to be provided with some forms of (non-monetary) positive recognition when they share the learned knowledge and skills in the workplace.

It is also important that when trainees return to their work, they receive *feedback* from their managers and supervisors regarding their job performance after attending training. According to Wexley and Latham (1991), practice without evaluative *feedback* retards learning and is critical to both learning and motivation. This thesis has shown that *sharing behaviour* is a significant contributor to the formation of *feedback*. Therefore, trainees should be encouraged to share the learned knowledge and skills with their colleagues so that the *feedback* they receive will tell them whether their understanding of their learned knowledge and skills is correct. This critical feedback will then allow trainees to make the necessary adjustments in their subsequent behaviour. Sharing job knowledge is also a key element of successful teamwork (Stevens 1994).

In a situation where trainees have successfully learned their lessons in training, this study has shown that a lack of *personal capacity for transfer* may reduce their *motivation to transfer* training in the Malaysian public sector. A major finding of this study is the importance of *sharing behaviour* in the formation of *personal capacity for transfer*. It may be possible to build trainees' *personal capacity for transfer* by encouraging the sort of sharing behaviour described above. Knowledge sharing is a dynamic process and it works both ways in the sense that when trainees share their learnings they help others to learn while at the same time they help themselves through learning from others. Research has consistently reported these and other benefits of knowledge sharing in the workplace. For instance, Tschannen-Moran (2001) was able to demonstrate that knowledge sharing led to better decision making. Other researchers have found knowledge sharing led to: improvements in individual learning (Collison & Cook 2004); and to project effectiveness (Brown & Eisenhardt 1995; Henderson & Cockburn 1994; Leanord-Barton & Sinha 1993).

Discussion

This section overviewed the implications of the findings of this study for HRD managers. The findings demonstrate the potential for HRD managers to optimise transfer of training in the Malaysian public sector through a series of training interventions. The thesis found that whilst some of the key variables associated with transfer of training pertain to HRD managers directly and their role in developing and conducting training, other variables reside with organisational players such as managers and supervisors. Together, the findings of this study impact on the HRD function at two broad stages: prior to training and when trainees return to work. The following section summarises the findings into activities, which can be conducted by an HRD manager in these two phases of training.

Pre training HRD functions which can improve transfer of training

The stage before training commences includes the tasks of preparation of trainees and course design. At the stage of preparation of trainees, the variables that are important for transfer are: *learner readiness*; *performance-self efficacy, personal capacity for transfer* and *transfer effort-performance expectations.* In preparing trainees, their supervisors have an opportunity to contribute to *learner readiness* by discussing and selecting with them the most appropriate training program suitable for enhancing the trainee's performance in some aspect of the job. The discussion should ideally focus on trainee's needs both job related and related to the trainee's professional development so there is a sense of tailoring for the trainee a set of programs aimed at increasing *performance-self efficacy*. In this discussion supervisors should make explicit that the purpose of training is to improve job performance. At the same time, trainees given the freedom to give their opinions and to choose the training programs they think best for them will improve their *learner readiness*.

It is also important at this stage for supervisors to evaluate the strengths and weaknesses of the trainees before sending them to training. Identified skill weaknesses can be used to determine pre-requisite training needed by trainees. Clearly, if trainees do not have the pre-requisites to attend a particular training, they will not be able to learn and they will not apply learning on the job (*personal capacity for transfer*). Finally, trainees must be given an expectation that they will be expected to transfer their training into their jobs and this may be through a presentation, project or group work. It is likely that if expectation that effort devoted to transferring learning will lead to changes in job performance there will be greater *transfer effort-performance expectations*.

At the stage of training course design, the variables that are important for transfer are: *content validity* and *transfer design*. This phase should entail the HRD manager taking into account the strategic plan for the organisation so that they can align their training accordingly. Supervisors of the trainees should be consulted so that training tasks match the work actually undertaken. Trainees can be invited at this stage to give them the opportunity to describe their job and the knowledge and skills required to perform the job. This will ensure that accurate knowledge and skills needed to perform the job are identified (*content validity*). Then, training course design requires HRD managers to develop training instructions that match trainees' job requirements and based on trainees' interest and competencies to give trainees the ability to transfer training to the job (*transfer design*). A return to work plan including the sorts of projects, presentations or other on the job training components will assist in ensuring transfer is managed back in the workplace.

Post- training phase HRD functions which can improve transfer of training

When trainees return to work, the variables important in transfer of training are: *feedback*, *personal outcomes-positive, supervisor sanctions* (transfer climate), *opportunity to use* training on the job (ability) and knowledge *sharing behaviour*. In this phase, supervisors play an important role in supporting the returned trainees. HRD managers should consider core training for managers and supervisors on issues such as punishment or criticism (supervisor sanctions) and what constitutes constructive *feedback*.

At the same time, trainees should be given tasks with adequate resources to allow them to apply their training (*opportunity to use*). These projects or group work tasks should provide trainees with the opportunity to share the learned knowledge and skills obtained from training with others in the workplace (*sharing behaviour*). Finally, HRD managers should ensure that supervisors and managers understand appropriate reward systems for trainees when who share their knowledge and apply the knowledge learned on the job (*personal outcomes-positive*). These might involve praise and recognition by managers and supervisors in the forms of being allocated interesting, meaningful and challenging tasks. The summary of variables important for pre-training and post-training HRD functions is depicted in Table 7.1 below.

Table 7.1 Pre-training and Post-training Variables for HRD Functions

Pre-Training Phase	Post-Training Phase
Preparation of Trainees • Learner readiness • Performance-self efficacy • Transfer effort-performance expectations • Personal capacity for transfer *Course Design* • Content Validity • Transfer Design	• Feedback • Personal outcomes-positive • Supervisor sanctions • Opportunity to use • Sharing behaviour

By sorting the variables into two stages (prior to training and return to work) of activities for HRD managers to improve transfer of training in the Malaysian public sector, it is argued that a more holistic approach to training design and execution can be implemented. The next section of this Chapter moves to the implications of the study for HRD theory.

7.3 Implications for HRD Theory

This thesis set out to explore the nature of the motivational factors which underpin a trainee's desire to transfer what was learned in training into their everyday jobs. It was also an aim of this study to determine the role of knowledge sharing in the mechanism of transfer of training. Indeed, it was a key contention of the thesis that knowledge sharing is a neglected element in the current understanding of transfer of training. Two key models were used to explore the areas of motivation and knowledge sharing. First, the Human Resource Development Evaluation Research and Measurement Model (the HRD model) developed by Holton (1996), provided 16 variables known to influence *motivation to transfer*:

1. secondary influence variables (*performance-self efficacy* and *learner readiness*);
2. expected utility variables (*transfer effort-performance expectations* and *performance-outcomes expectations*);
3. transfer climate variables (*feedback, peer support, supervisor support, openness to change, personal outcomes-positive, personal outcomes-negative* and *supervisor sanctions*);
4. ability variables (*personal capacity for transfer* and *opportunity to use*); and
5. enabling variables (*content validity* and *transfer design*)

The Theory of Planned Behaviour (TPB) model devised by Ajzen (1991) was also used in the conceptual design for this study (see Chapter 3, section 3.3.3) from which the knowledge sharing behaviour variables were tested. Specifically, the knowledge sharing variables consisted of: *sharing behaviour, intention to share, attitude toward knowledge sharing, subjective norms toward knowledge sharing,* and *perceived behavioural control toward knowledge sharing.*

The findings of the study demonstrated that the variables tested did not perform as expected from the initial model devised for this thesis. The evolution of the final structural model developed in this study was described in Chapter 6 (section 6.2.4) and depicted in Figure 6.4. This section now turns to the implications of the findings for HRD theory of the final structural model.

Contributions to Theory

First, as discussed above, this thesis is the first study to examine sharing behaviour across a range of training types (general training; management/leadership training; computer training) and demographics (gender; age; level of education; work experience; position of employment) in the Malaysian public sector. The findings discussed in Chapter 5 demonstrated that trainees across these training types and demographics indicated strong levels of *sharing behaviour*, suggesting that *sharing behaviour* is a potential transfer factor because it can be generalised across training types and demographics. Previous transfer of training models, in particular the main Holton (1996) model did not include *sharing behaviour* as a factor so this thesis makes a key contribution in adding this variable to the chain of variables contributing to transfer of training.

Second, the final structural model (see Chapter 6, see Figure 6.4) showed that *sharing behaviour* had an indirect influence on *motivation to transfer* via its relationship with *personal outcomes-positive*. In the transfer of training literature, several studies have shown the significant influence of *personal outcomes-positive* on training transfer (Bates 2001; Bates & Holton 1999; Holton et al. 2000; Holton et al. 1997; Tracey et al. 1995) and *motivation to transfer* (Kontoghiorghes 2001) but none had attempted to clarify the factors which contribute to the formation of *personal outcomes-positive*. In other words, this thesis demonstrated that trainees who perceive positive outcomes associated with their sharing behaviour are motivated to transfer their training in the workplace.

Third, the final structural model (see Chapter 6, Figure 6.4.) also showed that *sharing behaviour* had an influence on *motivation to transfer* via its relationship with *feedback*, which in turn, influences *motivation to transfer*. A number of researchers have suggested that when trainees are given *feedback* regarding their job performance after attending training, it helps them to apply what they have learned on the job (Clarke 2002; Holton et al. 1997; Reber & Wallin 1984; Rouiller & Goldstein 1993; Tracey et al. 1995) (Chapter 2, section 2.5.1). However, no studies found had attempted to clarify the factors which contribute to the formation of *feedback*. This was addressed in this thesis by showing that *sharing behaviour* has a direct influence on *feedback*. The implication for HRD theory is that when trainees share the learned knowledge and skills with their colleagues, the *feedback* they receive will allows them to make necessary adjustments in their subsequent behaviour to correct errors or fine-tune their performance.

Fourth, this thesis demonstrated that *sharing behaviour* has an influence on *motivation to transfer*, via its relationship with *content validity*, which itself influences *motivation to transfer*. Several studies had also observed the direct effect of *content validity* on *motivation to transfer* (Clark et al 1993; Seyler et al. 1998) and *training transfer* (Axtell et al. 1997; Bates et al. 2000; Holton et al. 2000). Again, none had attempted to clarify the factors that could contribute to the formation of *content validity*. This thesis contributes to a deeper understanding of *content validity* by showing that *sharing behaviour* is a potential factor that contributes to the formation of *content validity*. This means that when trainees share the learned knowledge and skills obtained from training, the more the training content reflects trainees' job requirements, the more it influences their *motivation to transfer*.

Finally, this thesis demonstrated the direct influence of *sharing behaviour* on *personal capacity for transfer*. In the transfer literature, researchers have acknowledged that *personal capacity for transfer* is an important determinant of training transfer (Chen 2003; Holton et al. 1997; Holton et al. 2000). However, empirical research examining the factors that contribute to the formation of *personal capacity for transfer* has been lacking. This thesis contributes to this area of research by showing that *sharing behaviour* has a direct influence in the formation of *personal capacity for transfer*. The implication for HRD theory of this finding is that when trainees share the learned knowledge and skills, they can help others to learn and apply that learning while at the same time help themselves by learning from others.

The indirect influence of *sharing behaviour* on *motivation to transfer* via its relationship with *personal outcomes-positive*, *feedback*, *content validity* and *personal capacity for transfer* will have its impact on HRD theory and practice through the development of a range of mechanisms to improve *sharing behaviour* as an explicit goal of workplace training because of its role in enhancing transfer of training.

7.4 Generalisability of the Study

This is a study of *motivation to transfer* training set in the Malaysian public sector where intrinsic rewards such as pride in a job well done, or a sense of personal achievement, are more important (or at least more pragmatic) than extrinsic rewards such as pay increases or job promotions. To that extent, the findings of the study are confined to that sector. Indeed, one aim of this study was to fill the research gap by examining the factors which influence *motivation to transfer* in this sector which has invested heavily in training. This study will provide some tools to assist in building a return on investment on training through greater transfer of training in the workplace.

Despite the specific setting for the study, it is argued that the findings here will have some transportability, particularly to other public sector organisations. As discussed in Chapter 5, findings of research in the United States also showed that intrinsic rewards proved to be more important than extrinsic rewards in their public sector (Bates 2001; Kontoghiorghes 2001). The most cited authority on public sector motivation stated, Perry and Wise (1990:368) describe it as: 'an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations'. The phenomenon has been heralded as the mechanism through which dedicated individuals may be recruited into the public sector or through which increased productivity may be tapped (Mann 2006). In this regard, it is argued here that at least in a public sector context, the findings of the study may have a degree of generalisability and thus the thesis makes a contribution to the international literature on the subject.

7.5 Research Limitations

Whilst the findings of this thesis have the potential for generalisability, they are not without several limitations and these are addressed here.

First, the data was collected from a purposive sampling of government employees attending training at the National Institute of Public Administration, Malaysia in the month of August 2005 until September 2005. This means that the 291 trainees in this study represent only a sub-sample of all trainees attending training in the year 2005.

Second, this study uses self-reports for all the variables under investigation. Other methods including direct observation or testing of employees back in the workplace may have alleviated this problem but were impractical to undertake (both in terms of time and cost) for the present study. It is acknowledged that the results of a single source data may be affected by method variance as is often the case with survey research studies (Podsakoff & Organ 1986).

Third, the number of variables used when modelling with SEM was in a manageable set due to the small sample size obtained in this study. The researcher recognised that there are other potential variables such as *opportunity to use* and *performance-self efficacy* that may have an impact on motivation to transfer training. Clearly, further research utilising a larger sample would have the benefit of inclusion of more factors.

Fourth, although the scales used in this study were in the desired ranged of validity and reliability, they were not tested against a different set of data due to the difficulty of the researcher in obtaining a large number of respondents at the time of study. As discussed in Chapter 3, when the study was conducted, many training programs were cancelled due to low participation and accommodation problems. Using different sets of data for construct reliability and validity may have increased the confidence in the results obtained.

Finally, when modelling with SEM, the structural model was revised in order to improve fit. Clearly, it should be regarded as tentative until cross-validated using a different set of data.

7.6 Future Research

The findings from this study and the limitations listed above provide some avenues to briefly consider future research. First, this thesis had shown that *sharing behaviour* was stable and rated highly across training types and trainees' demographics. Future research could examine *sharing behaviour* across different departments in the Malaysian public sector. If *sharing behaviour* is also found stable across departments, a conclusion can be made that *sharing behaviour* is likely to be a transfer of training factor in the Malaysian public sector.

Second, this thesis had shown that *sharing behaviour* had an indirect relationship with *motivation to transfer* via its relationship with *personal outcomes-positive*, *feedback*, *content validity* and *personal capacity for transfer*. The present study was limited in terms of its sample size and therefore, could not include other factors. It would be interesting to know whether *sharing behaviour* has an indirect relationship with *motivation to transfer* via its relationship with other transfer of training variables such as *performance self-efficacy* and *opportunity to use*. It could be that trainees who share their knowledge in the workplace are more confident to increase their job performance and are given more *opportunity to use* training on the job, which in turn influences their *motivation to transfer* training.

Third, this thesis found that *personal outcomes-positive* was significantly different across trainees' positions of employment. Trainees from management groups rated *personal outcomes-positive* higher than trainees from support groups. Because trainees in this study perceived *personal outcomes-positive* as being related to intrinsic rather than extrinsic rewards, it could be that trainees from the management group receive higher intrinsic outcomes than trainees from support group. Because reward is important for transfer of training (see Chapter 2, section 2.5.1), future research could investigate what sort of rewards would be better suited to the management group and the support group.

Fourth, this thesis also revealed that the female trainees have better perceptions about the role of peers and supervisors in reinforcing *sharing behaviour* than do male trainees. Future research could explore the role that supervisors play in facilitating knowledge sharing by trainees in the workplace. This is because supervisors are seen as the person responsible for co-ordinating and directing resources in the department and therefore, they have a strong influence in encouraging employees to share knowledge (Lin & Lee 2004).

Fifth, this thesis found that less educated trainees perceived greater support from their supervisors than did more educated ones (see Chapter 5, section 5.4.2). It could be that more educated trainees are more independent when carrying out their duties and therefore do not expect too much support from their supervisors. It could also reflect that supervisors may not feel it necessary to provide encouragement or support to more educated workers. Again, given the pivotal role of supervisors as facilitators or inhibitors of transfer of training, future research could be well directed to this question.

Sixth, when this study was conducted the researcher did not have the opportunity to examine the validity and stability of the scales used in this thesis with a different set of data. Future research could examine these criteria using different set of data as well as to include validated items to improve the strength of the scales.

Finally, the structural model was revised in order to improve fit. This also reflects a limitation of the study and it is an area where future research could cross validate the model using different set of data.

7.7 Summary

This Chapter discussed the findings of this study in terms of their implications for theory and practice. The Chapter outlined a range of HRD interventions which may assist in promoting the factors which enhance transfer of training as well as identifying the interventions which were found to inhibit transfer. The Chapter detailed the contribution of this study to HRD theory on the basis of the key finding knowledge *sharing behaviour* should be acknowledged as a factor which influences *motivation to transfer*. The finding highlights the omission of knowledge *sharing behaviour* from the main HRD models.

The Chapter then outlined the potential for generalisability of the findings in this study and also the limitations. Both areas give rise to a range of future research proposals. The next Chapter summarises the work of this thesis.

CHAPTER 8

SUMMARY AND CONSLUSIONS

8.1 Introduction

There has been very little research on transfer of training, particularly set in the Malaysian public sector. This was observed by Saiyadain and Ali (1995) who reported that there was a dearth of published empirical material on managerial training. Since then, only one study was located examining the problem of transfer in management training and development in Malaysia, and this was conducted in the manufacturing sector (Hameed & Analoui 1999). A study by Hashim (2001) on training evaluation practices in Malaysia marks the only recent contribution to the field. It is in the context of the research gap in transfer studies in the public sector of Malaysia this thesis aimed to make its contribution.

The thesis also aimed to contribute to a greater understanding of the factors important in advancing motivation to transfer by making a contribution to the international literature. In the literature on training transfer, researchers and practitioners have acknowledged that transfer of training will occur only when trainees have the desire or *motivation to transfer* training to the job (Baldwin & Ford 1988; Noe 1986; Noe & Schmitt 1986; Wexley & Latham 1991). Therefore, organisations wishing to enhance the ROI from training must understand transfer variables and intervene to limit those variables that inhibit transfer (Baldwin & Ford 1988; Holton 1996; Holton et al. 2000; Wexley & Latham 1991). This study takes this understanding of *motivation to transfer* further by testing the hypothesis that knowledge *sharing behaviour* also influences a trainee's *motivation to transfer* their training.

The research framework for this thesis was constructed from an adaptation of two key HRD models (Holton 1996; Holton et al. 2000) and the theory of planned behaviour

(TPB) (Ajzen 1991). The research framework was designed to explore the thesis that trainees' *motivation to transfer* training is influenced by a number of secondary influence variables, expected utility variables, transfer climate variables, enabling variables and ability variables. Also included in the research framework is *sharing behaviour* which is hypothesised as being linked to *motivation to transfer* training.

This Chapter summarises the findings of the thesis in terms of their implications on HRD practice and theory.

8.2 Summary of the Findings for HRD Practice

As discussed in Chapter 7, the findings of this thesis impact on the HRD function at two broad levels: Pre training, and Post training. These two levels provide the HRD manager with a pivotal role in ensuring that trainees are *motivated to transfer* their training to the job.

Level One: Pre Training

Prior to training, HRD managers and trainees' supervisors are responsible for the preparation of trainees for the training programs and for the course design.

Preparation of trainees:

- HRD managers and supervisors need to ensure that trainees are ready to participate in the future training programs. Programs should be tailored to trainee needs and trainees themselves need the freedom to choose which training programs they need to attend (*learner readiness*).
- HRD managers and supervisors should evaluate the strengths and weaknesses of the trainees to determine the pre-requisites that trainees need before sending them to training (*personal capacity for transfer*).
- Trainees need to know that the purpose of training is to improve job performance (*performance-self efficacy*).

- Trainees need to know that the effort they put into transferring their learning will lead to improved job performance (*transfer effort-performance expectations*).

Course design:

- HRD managers, supervisors and trainees should discuss the knowledge and skills required for job to ensure that the training content reflects trainees' job requirements (*content validity*).
- HRD managers should develop training instructions that match trainees' job requirements and the instructions should be based on trainees' interest and competencies (*transfer design*).

Level Two: Post Training

HRD managers should equip the supervisors of trainees to:

- Understand the negative effect of sanctions or criticism on trainees trying to apply their training on the job (*supervisor sanctions*).
- Provide trainees with frequent, structured and constructive feedback regarding their job performance when they apply the training (*feedback*).
- Provide trainees the task on the job and adequate resources (i.e., financial and equipment) for trainees to apply training (*opportunity to use*).
- Provide trainees the opportunity to share their experience attending training and to share the new learning through presentations or teaching their colleagues (*sharing behaviour*).
- Ensure information systems that support knowledge sharing are in place (*sharing behaviour*).
- Reward trainees through encouragement, praise or by allocating meaningful and interesting tasks when trainees share their learning (*personal outcomes-positive*).

The findings reported above create an extended set of tasks for HRD managers who seek greater transfer of training effort from trainees in the Malaysian public sector. Further, the findings provide a more holistic vision for transfer of training which go beyond the role of the HRD manager and include roles for the trainees themselves and their supervisors. The findings of this study may assist in gaining greater return on investment for the Malaysian public sector by providing HRD managers with new ways of managing the training effort. Finally, it is likely that these factors have relevance for public sector HRD managers more broadly as there are many commonalities amongst public sector workers across the world which is reported in the international literature.

8.3 Summary of the Findings for HRD Theory

Apart from the practical implications for HRD managers, trainees and their supervisors arising from this study, there are also a number of contributions to HRD theory made and these are summarised below:

First, this thesis developed a structural model for *motivation to transfer* training which, for the first time includes a role for *sharing behaviour*. The model amends existing key HRD models (Holton 1996; Holton et al. 2000) and makes a key contribution to HRD theories of transfer of training.

Second, this thesis found that trainees across three training types (general training; management/leadership training; computer training) and a range of demographics (age; gender; level of education; work experience; position of employment) indicated strong levels of sharing their learned knowledge and skills in the workplace. The fact that *sharing behaviour* can be generalised across the training types and demographics points to it being a potential transfer of training factor.

Third, the thesis found that sharing behaviour contributes to the formation of *positive personal outcomes* as a result of trainees applying their training, which in turn, positively influences their *motivation to transfer* training.

Fourth, it was determined that *sharing behaviour* contributes to the formation of *feedback*, which in turn, positively influences trainees' *motivation to transfer* training.

Fifth, the study revealed that *sharing behaviour* contributes to the formation of *content validity*, which in turn, positively influences trainees' *motivation to transfer* training.

Finally, sharing behaviour was found to contribute to the formation of *personal capacity for transfer*, which in turn, positively influences trainees' *motivation to transfer* training.

This thesis has therefore presented a broader view of the phenomenon of transfer of training and the role that knowledge *sharing behaviour* plays in this dynamic than was previously available. These findings extend the mainstream literature and importantly contribute to a revised model for *motivation to transfer* which amends the two key models in the literature (Holton 1996; Holton et al. 2000) and provides a new insight into the understanding and operation of a third model, TPB (Azjen 1991) and its role in transfer of training. This extended view provides an exploration of the importance of sharing the knowledge learned in workplace training as a precursor to transferring that training to the job. Thus the study contributes to theories relating to learning in the workplace.

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APPENDIX A

MAIN STUDY QUESTIONNAIRE (ENGLISH AND BAHASA MALAYSIA VERSIONS)

INFORMATION TO THE RESPONDENT

My name is **SHAHRIL BIN BAHARIM, a Ph. D candidate at the School of Management, Victoria University, Melbourne, Australia.** For your information, my thesis title is **"The Influence of Knowledge Sharing on Transfer of Training: A Malaysian Public Sector Context".**

This research is intended to identify factors that influence the transfer of training (the application of knowledge and skills gained in training on the job) and also to test on the importance of knowledge sharing as a potential factor to influence the transfer of training. This research is very important because it can provide valuable information on factors that can influence the transfer of training in the context of Malaysian public sector and to develop a model of training evaluation integrated with the knowledge sharing. For that purpose, I would like to invite you to take part in this research.

Below is important information related to the questionnaire attached.

- **The questionnaire consists of 2 parts**. Part 1 is demographical information while Part 2 consists of 87 statements that are related to the factors that influence the transfer of training.

- **The time needed** to answer all 87 statements is **about 20 minutes** or less than that.

- Participant is expected to answer **all 87 statements with honesty and truthful**.

- There is no right or wrong answer. Participant only has to provide a suitable rating on each statement. The rating starts **from 1 (Strongly disagree) until 5 (Strongly agree)**.

- All information is for research purposes and will be treated as **private and confidential, hence it will not be revealed on any circumstances**.

If you have any question, contact me at **shahril.baharim@research.vu.edu.au**, Tel: 013-2336357 or proceed to my supervisor, Dr. Bernadine Van Gramberg, School of Management, Victoria University, Australia at **Bernadine.VanGramberg@vu.edu.au**, Tel: 613 9919 4489 for verification.

Your corporation is highly appreciated.

Thank You.

Yours truly,

(SHAHRIL BIN BAHARIM)

This questionnaire consists of two parts. Part 1 is demographical information while Part 2 has 87 statements related to the factors that influence the transfer of training. Participant is expected to answer all statements with honesty and truthful.

<u>Part 1</u>

Instruction: For Number 1, please give the name of training attended. For Number 2 until Number 7, mark with symbol (√) to the related information.

1. Name of training attended : ____

2. Working place :
   a) Public Sector
   b) Private Sector
   c) Statutory Body
   d) Others

3. Designation :
   a) Professional and Management Group
   b) Support Group 1
   c) Support Group 2

4. Gender : a) Male b) Female

5. Age :
   a) 20 years old and below
   b) 21-30 years old
   c) 31-40 years old
   d) 41-50 years old
   e) 51 years old and above

6. Education :
   a) Secondary school and below
   b) Diploma / Certificate
   c) Undergraduate
   d) Master
   e) Ph. D
   f) Other professional qualifications

7. Working experiences :
   a) Less than 5 years
   b) 5-10 years
   c) 11-20 years
   d) More than 20 years

Part 2

Instruction: For each statement, circle only one number (1, 2, 3, 4 or 5) located at its right side that corresponds your opinion on the training.

1 – Strongly disagree
2 - Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

1.	I know that this training is good for me.	1	2	3	4	5
2.	I applied for this training on my own.	1	2	3	4	5
3.	I will put into practice what I have learned from the training to the office.	1	2	3	4	5
4.	I will work with more confidence if I put into practice what I have learned from the training.	1	2	3	4	5
5.	I am definitely interested to join this training.	1	2	3	4	5
6.	I will make sure that what I have learned from the training will be put into practice for job benefit.	1	2	3	4	5
7.	I will work with more organized if I put into practice what I have learned from the training.	1	2	3	4	5
8.	I am definitely ready to join this training.	1	2	3	4	5
9.	I knew that I would obtain something beneficial from this training.	1	2	3	4	5
10.	I will work as hard as possible to put into practice what I have learned for job benefit.	1	2	3	4	5
11.	My work will be rewarded if I put into practice what I have learned.	1	2	3	4	5
12.	I will do a plan to put into practice what I have learned after I get back to the office.	1	2	3	4	5

(Statement 13 until 23 in the next page)

1 – Strongly disagree
2 - Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

13.	I will get a good result from the job evaluation report whenever I put into practice what I have learned from the training.	1	2	3	4	5
14.	I will be in disgraceful if I do not put into practice what I have learned from the training.	1	2	3	4	5
15.	I am capable to put into practice what I have learned from the training even though I am busy.	1	2	3	4	5
16.	My colleague will support me to put into practice what I have learned from the training.	1	2	3	4	5
17.	My colleague is willing to help me to put into practice what I have learned from the training.	1	2	3	4	5
18.	I will be seen as skeptical if I do not put into practice what I have learned from the training.	1	2	3	4	5
19.	It is a waste by sending me to the training if I do not put into practice what I have learned from the training.	1	2	3	4	5
20.	I have a mental capability to put into practice what I have learned from the training in carrying out duties.	1	2	3	4	5
21.	I have a physical capability to put into practice what I have learned from the training in carrying out duties.	1	2	3	4	5
22.	My job evaluation report will be jeopardised if I do not put into practice what I have learned from the training.	1	2	3	4	5
23.	My colleague is willing to give his opinions in helping me to put into practice what I have learned from the training.	1	2	3	4	5

(Statement 24 until 34 in the next page)

1 – Strongly disagree
2 - Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

24.	My colleague will encourage me to apply what I have learned from the training in carrying out duties.	1	2	3	4	5
25.	My supervisor / manager will support me to apply what I have learned from the training in carrying out duties.	1	2	3	4	5
26.	My supervisor / manager will help me to apply what I have learned from the training in carrying out duties.	1	2	3	4	5
27.	My supervisor / manager will say that the application of what I have learned from the training will not bring any benefit.	1	2	3	4	5
28.	My supervisor / manager will oppose any application of technique that I have learned from the training.	1	2	3	4	5
29.	My supervisor / manager will always provide me with encouragement to practice what I have learned from the training in carrying out duties.	1	2	3	4	5
30.	My supervisor / manager sets the training objective to encourage me to practice what I have learned from the training.	1	2	3	4	5
31.	My supervisor / manager will instruct me with a method that is against to what I have learned from the training.	1	2	3	4	5
32.	I will be critised by my supervisor / manager if I put into practice what I have learned from the training.	1	2	3	4	5
33.	The training contents are suitable for the duties.	1	2	3	4	5
34.	The training has been delivered systematically.	1	2	3	4	5

(Statement 35 until 47 in the next page)

1 – Strongly disagree
2 - Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

35.	The training has been delivered effectively.	1	2	3	4	5
36.	The training has been delivered in a straightforward approach.	1	2	3	4	5
37.	The training has been delivered by using examples that correspond with the need for duties.	1	2	3	4	5
38.	My employer has given me a duty that requires practicing what I have learned from the training.	1	2	3	4	5
39.	My employer has allocated an enough budget for me to put into practice what I have learned from the training.	1	2	3	4	5
40.	The training contents are related to the need of my duties.	1	2	3	4	5
41.	The training contents are important to the need of my duties.	1	2	3	4	5
42.	The training contents are something needed for the need of my duties.	1	2	3	4	5
43.	My employer has allocated the required resources for me to put into practice what I have learned from the training.	1	2	3	4	5
44.	The required resources allocated by my employer are sufficient for me to put into practice what I have learned from the training.	1	2	3	4	5
45.	The training contents do not fulfill the need for duties.	1	2	3	4	5
46.	I expect my work will be more efficient if I put into practice what I have learned from the training.	1	2	3	4	5
47.	I expect my quality of work will be better if I put into practice what I have learned from the training.	1	2	3	4	5

(Statement 48 until 61 in the next page)

1 – Strongly disagree
2 - Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

48.	I expect that I will receive various facilities if my job performance increased.	1	2	3	4	5
49.	I expect that I will be more entrusted if my job performance increased.	1	2	3	4	5
50.	I expect that my work will be more effective if I put into practice what I have learned from the training.	1	2	3	4	5
51.	I expect that my productivity will be increased if I put into practice what I have learned from the training.	1	2	3	4	5
52.	I expect that I will be rewarded if my job performance increased.	1	2	3	4	5
53.	I expect that if I put into practice what I have learned from the training, my job performance will be degraded.	1	2	3	4	5
54.	I expect that I will be promoted if my job performance increased.	1	2	3	4	5
55.	Team is not ready to change.	1	2	3	4	5
56.	Team is hard to accept new ideas.	1	2	3	4	5
57.	Team is not ready to learn new methods.	1	2	3	4	5
58.	Team with more experience will not agree with any changes to be made.	1	2	3	4	5
59.	I am confidence to increase my job performance.	1	2	3	4	5
60.	I have the capabilities to increase my job performance.	1	2	3	4	5
61.	After training, I will receive feedback to improve what I have learned from the training.	1	2	3	4	5

(Statement 62 until 72 in the next page)

1 – Strongly disagree
2 - Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

62.	I will accept any constructive comment every time I put into practice what I have learned from the training.	1	2	3	4	5
63.	I am confident that I can improve my job performance because I am a discipline person.	1	2	3	4	5
64.	I am confident that I can improve my job performance because I am a hardworking person.	1	2	3	4	5
65.	I will accept any lesson every time I try to put into practice what I have learned from the training.	1	2	3	4	5
66.	I will accept any good advice every time I try to put into practice what I have learned from the training.	1	2	3	4	5
67.	Sharing of knowledge and skills that have been learned during training are good.	1	2	3	4	5
68.	Sharing of knowledge and skills that have been learned during training can improve job performance.	1	2	3	4	5
69.	Sharing of knowledge and skills that have been learned during training can bring benefits.	1	2	3	4	5
70.	My supervisor / manager thinks that I should share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
71.	My head department thinks that I should share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
72.	Sharing of knowledge and skills that have been learned during training are advantageous.	1	2	3	4	5

(Statement 73 until 81 in the next page)

1 – Strongly disagree
2 - Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

73.	Those who are closed to me think that I should share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
74.	Sharing of knowledge and skills that have been learned during training in the workplace will not bring any benefits.	1	2	3	4	5
75.	Those who are of the same mind with me think that I should share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
76.	I can share knowledge and skills that have been learned from the training into the workplace without any enforcement.	1	2	3	4	5
77.	I can share knowledge and skills that have been learned from the training into the workplace at any time.	1	2	3	4	5
78.	I can still share knowledge and skills that have been learned from the training into the workplace even though I am busy.	1	2	3	4	5
79.	I will try to share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
80.	I plan to share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
81.	I always being invited to share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5

(Statement 82 until 87 in the next page)

1 – Strongly disagree
2 - Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

82.	I always discuss with my colleague regarding knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
83.	I always share knowledge and skills that have been learned from the training.	1	2	3	4	5
84.	I share knowledge and skills that have been learned from the training into the workplace in the past.	1	2	3	4	5
85.	I hope to share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
86.	I decide to share knowledge and skills that have been learned from the training into the workplace.	1	2	3	4	5
87.	I do not share anything in the workplace.	1	2	3	4	5

Your cooperation is needed to ensure all the above statements (1 – 87) have been answered in each page. Your cooperation is highly appreciated.

Thank You.

MAKLUMAT KEPADA RESPONDEN

Nama saya **SHAHRIL BIN BAHARIM**, **pelajar Ph.D di School of Management, Victoria University, Melbourne, Australia.** Untuk makluman, tajuk thesis saya ialah **"The Influence of Knowledge Sharing on Transfer of Training. A Malaysian Public Sector Context".**

Kajian ini bertujuan untuk mengenalpasti faktor-faktor yang mempengaruhi pemindahan latihan (aplikasi pengetahuan dan kemahiran yang dipelajari ketika latihan dalam melaksanakan tugas) dan juga untuk menguji kepentingan perkongsian pengetahuan dan kemahiran yang dipelajari sebagai satu faktor yang berpotensi dalam mempengaruhi pemindahan latihan. Kajian ini begitu penting kerana ia dapat memberikan maklumat yang berguna tentang faktor-faktor yang boleh mempengaruhi pemindahan latihan dalam konteks perkhidmatan awam di Malaysia dan untuk membangunkan model penilaian latihan yang menggabungkan perkongsian pengetahuan. Sehubungan dengan itu, saya ingin menjemput tuan-tuan dan puan-puan untuk mengambil bahagian dalam kajian ini.

Di bawah ini adalah maklumat penting yang berkaitan dengan soal selidik yang dilampirkan.

- **Soal selidik ini mengandungi 2 bahagian**. Bahagian 1 ialah maklumat demografi manakala Bahagian 2 pula mengandungi 87 kenyataan yang berkaitan dengan faktor-faktor yang mempengaruhi pemindahan latihan.

- **Masa yang diperlukan** untuk menjawab kesemua 87 kenyataan ini hanyalah mengambil masa **lebih kurang 20 minit sahaja** atau kurang dari itu.

- Kerjasama dipohon agar dapat **menjawab kesemua kenyataan tersebut dengan benar dan jujur.**

- **Tiada jawapan yang benar atau salah.** Tuan-tuan dan puan-puan hanyalah perlu memberikan kadaran yang difikirkan sesuai bagi setiap kenyataan. Kadaran yang digunakan ialah **1 (Amat Tidak Bersetuju) sehingga 5 (Amat Bersetuju).**

- Maklumat yang diberikan akan hanya diguna untuk tujuan penyelidikan sahaja. **Data individu tidak akan didedahkan walau dengan apa cara sekalipun.**

Jika tuan-tuan dan puan-puan terdapat sebarang pertanyaan, saya boleh dihubungi di shahril.baharim@research.vu.edu.au , Tel: 013-2336357 atau hubungi penyelia saya, Dr. Bernadine Van Gramberg, School of Management, Victoria University, Australia di email Bernadine.VanGramberg@vu.edu.au , Tel: 613 9919 4489 untuk pengesahan.

Kerjasama yang diberikan didahului dengan ucapan terima kasih.

Sekian.

Yang benar,

(SHAHRIL BIN BAHARIM)

Soal selidik ini dibahagikan kepada dua bahagian. Bahagian 1 adalah tentang maklumat demografi manakala Bahagian 2 pula mengandungi 87 kenyataan berkaitan faktor-faktor yang mempengaruhi pemindahan latihan. Adalah diharapkan tuan-tuan dan puan-puan dapat menjawab kesemua kenyataan tersebut dengan benar dan jujur.

<u>Bahagian 1</u>

Arahan : Bagi Nombor 1, sila berikan nama latihan yang dihadiri. Bagi Nombor 2 hingga7, tandakan (√) pada maklumat yang berkaitan dengan diri anda.

1. Nama latihan dihadiri :

____

2. Tempat berkhidmat : a) Sektor Awam
   b) Sektor Swasta
   c) Badan Berkanun
   d) Lain-lain

3. Jawatan : a) Kumpulan Pengurusan dan Profesional
   b) Kumpulan Sokongan I
   c) Kumpulan Sokongan II

4. Jantina : a) Lelaki b) Perempuan

5. Umur : a) 20 tahun dan ke bawah
   b) 21-30 tahun
   c) 31-40 tahun
   d) 41-50 tahun
   e) 51 tahun dan ke atas

6. Pendidikan : a) Sekolah menengah dan ke bawah
   b) Diploma/sijil
   c) Ijazah Sarjanamuda
   d) Ijazah Sarjana
   e) Ijazah Kedoktoran
   f) Lain-lain kelayakan profesional

7. Pengalaman kerja : a) kurang dari 5 tahun
   b) 5-10 tahun
   c) 11-20 tahun
   d) Lebih dari 20 tahun

<u>Bahagian 2</u>
Arahan: Bagi setiap kenyataan, bulatkan nombor (1, 2, 3, 4 atau 5) di sebelah kanan yang sesuai dengan pendapat anda tentang latihan.

1 - Amat tidak bersetuju
2 - Tidak bersetuju
3 - Tidak pasti
4 - Bersetuju
5 - Amat bersetuju

1.	Saya tahu latihan ini baik untuk saya.	1	2	3	4	5
2.	Saya sendiri yang memohon untuk hadir latihan ini.	1	2	3	4	5
3.	Saya akan mempraktikkan apa yang telah dipelajari setelah kembali ke pejabat.	1	2	3	4	5
4.	Saya akan bekerja dengan lebih yakin jika mempraktikkan yang telah dipelajari.	1	2	3	4	5
5.	Saya memang berminat untuk turut serta dalam latihan ini.	1	2	3	4	5
6.	Saya akan pastikan bahawa apa yang telah dipelajari akan dipraktikkan untuk faedah tugas.	1	2	3	4	5
7.	Saya akan bekerja dengan lebih teratur jika mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
8.	Saya memang bersedia untuk turut serta dalam latihan ini.	1	2	3	4	5
9.	Saya tahu saya akan perolehi sesuatu yang berfaedah dari latihan ini.	1	2	3	4	5
10.	Saya akan berusaha sedaya upaya untuk mempraktikkan apa yang telah dipelajari untuk faedah tugas.	1	2	3	4	5
11.	Hasil kerja saya akan mendapat pengiktirafan bila mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
12.	Saya akan membuat perancangan untuk mempraktikkan apa yang telah dipelajari setelah kembali ke tempat kerja.	1	2	3	4	5

(Kenyataan 13 hingga 23 di muka surat berikutnya)

1 - Amat tidak bersetuju
2 - Tidak bersetuju
3 - Tidak pasti
4 - Bersetuju
5 - Amat bersetuju

13.	Saya akan mendapat penilaian yang baik dalam laporan prestasi bila mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
14.	Saya akan dipandang rendah jika tidak mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
15.	Saya berkemampuan untuk mempraktikkan apa yang telah dipelajari walaupun saya sibuk.	1	2	3	4	5
16.	Rakan sekerja akan memberi sokongan untuk mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
17.	Rakan sekerja akan sudi menghulur bantuan untuk saya mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
18.	Saya akan dipandang serong jika tidak mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
19.	Menghantar saya ke latihan akan dianggap sebagai membazir jika tidak mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
20.	Saya mempunyai kemampuan mental untuk mempraktikkan apa yang telah dipelajari dalam melaksanakan tugas.	1	2	3	4	5
21.	Saya mempunyai kemampuan fizikal untuk mempraktikkan apa yang telah dipelajari dalam melaksanakan tugas.	1	2	3	4	5
22.	Laporan prestasi saya akan terjejas jika tidak mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
23.	Rakan sekerja akan sudi memberi pandangan dalam membantu saya mempraktikkan apa yang telah dipelajari.	1	2	3	4	5

(Kenyataan 24 hingga 34 di muka surat berikutnya)

1 - Amat tidak bersetuju
2 - Tidak bersetuju
3 - Tidak pasti
4 - Bersetuju
5 - Amat bersetuju

24.	Rakan sekerja akan menggalakkan saya menggunakan apa yang telah dipelajari dalam melaksanakan tugas.	1	2	3	4	5
25.	Penyelia/pengurus akan menyokong saya untuk mempraktikkan apa yang telah dipelajari dalam melaksanakan tugas.	1	2	3	4	5
26.	Penyelia/pengurus akan membantu saya mempraktikkan apa yang telah dipelajari dalam melaksanakan tugas.	1	2	3	4	5
27.	Penyelia/pengurus akan mengatakan penggunaan apa yang telah dipelajari tidak akan membawa sebarang kebaikan.	1	2	3	4	5
28.	Penyelia/pengurus akan menentang penggunaan teknik yang saya pelajari ketika latihan.	1	2	3	4	5
29.	Penyelia/pengurus sentiasa bersedia memberi galakan untuk saya mempraktikkan apa yang telah dipelajari dalam melaksanakan tugas.	1	2	3	4	5
30.	Penyelia/pengurus menetapkan matlamat latihan untuk menggalakkan saya mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
31.	Penyelia/pengurus akan mengarahkan saya menggunakan kaedah yang bertentangan dengan apa yang saya pelajari.	1	2	3	4	5
32.	Saya akan ditegur oleh penyelia/pengurus jika mempraktikkan teknik yang dipelajari ketika latihan.	1	2	3	4	5
33.	Kandungan latihan adalah sesuai untuk keperluan tugas.	1	2	3	4	5
34.	Latihan telah disampaikan dengan teratur.	1	2	3	4	5

(Kenyataan 35 hingga 47 di muka surat berikutnya)

1 - Amat tidak bersetuju
2 - Tidak bersetuju
3 - Tidak pasti
4 - Bersetuju
5 - Amat bersetuju

35.	Latihan telah disampaikan dengan cara yang berkesan.	1	2	3	4	5
36.	Latihan telah disampaikan dengan cara yang mudah difahami.	1	2	3	4	5
37.	Latihan telah disampaikan dengan menggunakan contoh-contoh yang sepadan dengan keperluan tugas.	1	2	3	4	5
38.	Majikan memberikan tugasan yang memerlukan saya mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
39.	Majikan menyediakan peruntukan kewangan yang mencukupi bagi membolehkan saya mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
40.	Kandungan latihan adalah berkaitan dengan keperluan tugas saya.	1	2	3	4	5
41.	Kandungan latihan adalah penting untuk keperluan tugas.	1	2	3	4	5
42.	Kandungan latihan adalah sesuatu yang diperlukan untuk keperluan tugas.	1	2	3	4	5
43.	Majikan menyediakan sumber-sumber yang diperlukan bagi mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
44.	Sumber-sumber yang disediakan majikan adalah mencukupi bagi mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
45.	Kandungan latihan tidak memenuhi keperluan tugas.	1	2	3	4	5
46.	Saya menjangkakan kerja saya akan lebih lancar jika mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
47.	Saya menjangkakan mutu kerja akan bertambah baik jika mempraktikkan apa yang telah dipelajari.	1	2	3	4	5

(Kenyataan 48 hingga 61 di muka surat berikutnya)

1 - Amat tidak bersetuju
2 - Tidak bersetuju
3 - Tidak pasti
4 - Bersetuju
5 - Amat bersetuju

48.	Saya menjangkakan akan menerima pelbagai kemudahan jika prestasi saya meningkat.	1	2	3	4	5
49.	Saya menjangkakan akan diberi lebih kepercayaan jika prestasi saya meningkat.	1	2	3	4	5
50.	Saya menjangkakan kerja saya akan lebih berkesan jika mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
51.	Saya menjangkakan produktiviti saya akan meningkat jika mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
52.	Saya menjangkakan akan menerima ganjaran jika prestasi saya meningkat.	1	2	3	4	5
53.	Saya menjangkakan penggunaan apa yang telah dipelajari akan memburukkan lagi prestasi saya.	1	2	3	4	5
54.	Saya menjangkakan akan dinaikkan pangkat jika prestasi saya meningkat.	1	2	3	4	5
55.	Kumpulan kerja tidak bersedia untuk berubah.	1	2	3	4	5
56.	Kumpulan kerja sukar untuk menerima idea baru.	1	2	3	4	5
57.	Kumpulan kerja tidak bersedia untuk mempelajari kaedah baru.	1	2	3	4	5
58.	Kumpulan kerja yang lebih berpengalaman tidak akan bersetuju dengan sebarang perubahan yang cuba dibuat.	1	2	3	4	5
59.	Saya mempunyai keyakinan diri untuk meningkatkan prestasi kerja.	1	2	3	4	5
60.	Saya mempunyai kebolehan untuk meningkatkan prestasi kerja.	1	2	3	4	5
61.	Selepas latihan, saya akan menerima maklumbalas tentang kemajuan menggunakan apa yang telah dipelajari.	1	2	3	4	5

(Kenyataan 62 hingga 72 di muka surat berikutnya)

1 - Amat tidak bersetuju
2 - Tidak bersetuju
3 - Tidak pasti
4 - Bersetuju
5 - Amat bersetuju

62.	Saya akan terima komen berguna setiap kali saya mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
63.	Saya yakin dapat meningkatkan prestasi kerja kerana saya seorang yang berdisiplin.	1	2	3	4	5
64.	Saya yakin dapat meningkatkan prestasi kerja kerana saya seorang yang rajin berusaha.	1	2	3	4	5
65.	Saya akan menerima tunjuk ajar setiap kali saya cuba mempraktikkan apa yang telah dipelajari.	1	2	3	4	5
66.	Saya akan menerima nasihat berguna bila mempraktikkan apa yang telah dipelajari	1	2	3	4	5
67.	Berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja adalah bagus.	1	2	3	4	5
68.	Berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja boleh meningkatkan prestasi kerja.	1	2	3	4	5
69.	Berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja boleh membawa kebaikan.	1	2	3	4	5
70.	Pengurus/penyelia beranggapan bahawa saya patut berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5
71.	Ketua jabatan beranggapan bahawa saya patut berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5
72.	Berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja adalah berfaedah.	1	2	3	4	5

(Kenyataan 73 hingga 81 di muka surat berikutnya)

1 - Amat tidak bersetuju
2 - Tidak bersetuju
3 - Tidak pasti
4 - Bersetuju
5 - Amat bersetuju

73.	Mereka yang rapat dengan saya beranggapan bahawa saya patut berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5
74.	Berkongsi pengetahuan dan kemahiran yang dipelajari di tempat kerja tidak mendatangkan apa-apa menafaat.	1	2	3	4	5
75.	Mereka yang sehaluan dengan saya beranggapan bahawa saya patut berkongsi pengetahuan dan kemahiran yang dipelajari di tempat kerja.	1	2	3	4	5
76.	Saya boleh berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja tanpa sebarang paksaan.	1	2	3	4	5
77.	Saya boleh berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja pada bila-bila masa.	1	2	3	4	5
78.	Saya masih boleh berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja walaupun saya sibuk.	1	2	3	4	5
79.	Saya akan cuba untuk berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5
80.	Saya merancang untuk berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5
81.	Saya selalu dipelawa berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5

(Kenyataan 82 hingga 87 di muka surat berikutnya)

1 - Amat tidak bersetuju
2 - Tidak bersetuju
3 - Tidak pasti
4 - Bersetuju
5 - Amat bersetuju

82.	Saya selalu berbincang dengan rakan sekerja berkenaan dengan pengetahuan dan kemahiran yang diperolehi ketika latihan di tempat kerja.	1	2	3	4	5
83.	Saya kerap berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5
84.	Saya berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja pada masa-masa yang lepas.	1	2	3	4	5
85.	Saya berharap dapat berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5
86.	Saya bercadang untuk berkongsi pengetahuan dan kemahiran yang dipelajari ketika latihan di tempat kerja.	1	2	3	4	5
87.	Saya tidak berkongsi apa-apa pun di tempat kerja.	1	2	3	4	5

Kerjasama dipohon agar dapat memastikan semua kenyataan (1- 87) telah dijawab di setiap muka surat. Kerjasama yang tuan-tuan dan puan-puan berikan amat dihargai.

Sekian, terima kasih.

APPENDIX B

LIST OF ITEMS GENERATED FOR EACH CONSTRUCT

Learner Readiness Items

Original Item	Source	Final Item Used in Pilot Test
I volunteer to participate in training programs.	Naquin and Holton (2003)	I applied for this training on my own.
I am definitely interested to join this training.	Focus group interview	I am definitely interested to join this training.
I am definitely ready to join this training.	Focus group interview	I am definitely ready to join this training.
Before the training, I had a good understanding of how it would fit my job-related development.	Holton et al. (2000)	I knew that I would obtain something beneficial from this training.
I know that this training is good for me.	Focus group interview	I know that this training is good for me.
I have made some preparation prior attending this training.	Focus group interview	I have made some preparation prior attending this training.
I receive information regarding available training opportunities.	Burke and Baldwin (1999)	I have obtained relevant information related to this training.

Performance-Self Efficacy Items

Original Item	Source	Final Item Used in Pilot Test
I have the confidence to increase my job performance.	Focus group interview	I have the confidence to increase my job performance.
I have the capabilities to increase my job performance.	Focus group interview	I have the capabilities to increase my job performance.
I am confident that I can improve my job performance if I want to.	Focus group interview	I am confident that I can improve my job performance if I want to.
I am confident that I can improve my job performance because I am a fast learner.	Focus group interview	I am confident that I can improve my job performance because I am a fast learner.
I am confident that I can improve my job performance because I am diligent.	Focus group interview	I am confident that I can improve my job performance because I am diligent.
I am confident that I can improve my job performance because I am a discipline person.	Focus group interview	I am confident that I can improve my job performance because I am a discipline person.
I am confident that I can improve my job performance because I am a hardworking person.	Focus group interview	I am confident that I can improve my job performance because I am a hardworking person.

Motivation to Transfer Items

Original Item	Source	Final Item Used in Pilot Test
When I leave training, I can't wait to get back to work to try what I have learned.	Naquin and Holton (2003)	I can't wait to try what I have learned in carrying out duties.
I get excited when I think about trying to use my new learning on my job.	Holton et al. (2000)	
I get excited about using my new learning.	Bates (2001)	
I will practice in earnestly what I have learned for the sake of my duties.	Focus group interview	I will practice in earnestly what I have learned for the sake of my duties.
I plan to use what I learned on the job.	Seyler et. al (1998) Bates et. al (2000)	I will do a plan to put into practice what I have learned after I get back to the office.
I will put into practice what I have learned from the training to the office.	Focus group interview	I will put into practice what I have learned from the training to the office.
I will work as hard as possible to put into practice what I have learned for job benefit.	Focus group interview	I will work as hard as possible to put into practice what I have learned for job benefit.
I will make sure that what I have learned from the training will be put into practice for job benefit.	Focus group interview	I will make sure that what I have learned from the training will be put into practice for job benefit.

Transfer Effort-Performance Expectations Items

Original Item	Source	Final Item Used in Pilot Test
I believe this training will help me improve performance in my current job.	Clark et al. (1993)	I expect that my performance will be increased if I put into practice what I have learned.
My job performance improves when I use new things that I have learned.	Holton et. al (2000) Bates (2001)	
Expectation: Increased in productivity.	Focus group interview	I expect that my productivity will be increased if I put into practice what I have learned from the training.
		I expect that if I put into practice what I have learned from the training, my job performance will be disgraded.
Expectation: Increased in efficiency	Focus group interview	I expect that my work will be more efficient if I put into practice what I have learned

		from the training.
Expectation: Increased in work quality.	Focus group interview	I expect my quality of work will be better if I put into practice what I have learned from the training.
Expectation: Working more effectively.	Focus group interview	I expect that my work will be more effective if I put into practice what I have learned from the training.

Note: * Negative worded item

Performance-Outcomes Expectations Items

Original Item	Source	Final Item Used in Pilot Test
When I do things to improve my performance, good things happen to me.	Bates (2001) Naquin & Holton (2003) Focus group interview	I expect that I will be rewarded if my job performance increased.
Will be promoted.	Focus group interview	I expect that I will be promoted if my job performance increased.
Will receive incentive.	Focus group interview	I expect that I will receive an incentive if my job performance increased.
Will receive various facilities.	Focus group interview	I expect that I will receive various facilities if my job performance increased.
Will be more entrusted.	Focus group interview	I expect that I will be more entrusted if my job performance increased.

Feedback Items

Original Item	Source	Final Item Used in Pilot Test
After training, I get feedback from people about how well I am applying what I learned.	Holton et al. (2000)	After training, I will receive feedback from people about how well I am applying what I learned.
Receive feedback	Focus group interview	The feedback helps me a lot in increasing my job performance.
Receive comment	Focus group interview	I will accept any constructive comment every time I put into practice what I have learned from the training.
Receive any lesson	Focus group interview	I will accept any lesson every time I try to put into practice what I have learned from the training.

Receive good advice	Focus group interview	I will accept any good advice every time I try to put into practice what I have learned from the training.

Peer Support Items

Original Item	Source	Final Item Used in Pilot Test
My colleagues encourage me to use the skills I have learned in training. My peers encourage my efforts to incorporate new procedures that I have learned in training	Holton et al. (2000); Holton et al. (2003); Seyler et al. (1998); Bates et al. (2000) Facteau et al. (1995)	My colleague will encourage me to apply what I have learned from the training in carrying out duties.
My co-workers and I set goals to apply managerial skills.	Enos et al. (2003)	My colleagues always willing to discuss on how to put into practice what I have learned in carrying out duties.
Peers give support.	Focus group interview	My colleague will support me to put into practice what I have learned from the training.
Peers give help.	Focus group interview	My colleague is willing to help me to put into practice what I have learned from the training.
Peers give opinions.	Focus group interview	My colleague is willing to give his opinions in helping me to put into practice what I have learned from the training.

Supervisor Support Items

Original Item	Source	Final Item Used in Pilot Test
My supervisor sets goals that encourage me to apply my training on the job.	Holton et al. (2000)	My supervisor/managers sets the training objective to encourage me practice what I have learned from the training.
My supervisor meets regularly with me to work on problems I may be having in trying to use my training. In this store, newly trained managers discuss how to apply their training on the job with their supervisors and other managers. Immediate supervisor discusses with me ways to apply managerial skills.	Bates et al. (2000) Tracey et al. (1995) Enos et al. (2003)	My supervisor/manager meets regularly with me to work on problems I may be having in trying to use what I have learned.
Supervisor/manager gives	Focus group interview	My supervisor/manager will

support.		support me to apply what I have learned from the training in carrying out duties.
Supervisor/manager gives help.	Focus group interview	My supervisor/manager will help me to apply what I have learned from the training in carrying out duties.
Supervisor/manager gives encouragement.	Focus group interview	My supervisor/manager will always provide me with encouragement to practice what I have learned from the training in carrying out duties.

Openness to Change Items

Original Item	Source	Final Item Used in Pilot Test
More experienced colleagues ridicule me when I use the techniques I learned in training.	Bates et al. (2000)	Team with more experience will not agree with any changes made.
People in my group are open to changing the way they do things.	Holton et al. (2000)	Team is not ready to change.
Hard to accept changes.	Focus group interview	Team is hardly to accept changes.
Team not ready to learn.	Focus group interview	Team is not ready to learn new methods.
Team is too rigid.	Focus group interview	Team is too rigid with the existing work procedures.
Team is hard to accept changes.	Focus group interview	Team is hardly to accept new ideas.

Personal Outcomes-Positive Items

Original Item	Source	Final Item Used in Pilot Test
If I use new skills learned in training, I can expect to receive some sort of recognition or reward. Employees in this organisation receive various ‘perks’ when they utilise newly learned skills on the job.	Burke and Baldwin (1999) Holton et al.(2003)	My work will be rewarded if I put into practice what I have learned.
Obtain good score in performance appraisal.	Focus group interview	I will obtain a good score in my performance appraisal if I put into practice what I have learned in carrying out duties.
Increased in work quality.	Focus group interview	My work quality will increase if I put into practice what I have

		learned.
Can work with more confidence.	Focus group interview	I will work with more confidence if I put into practice what I have learned from the training.
Can work with more effective.	Focus group interview	I will work with more effective if I put into practice what I have learned.
More organised at work.	Focus group interview	I will work with more organised if I put into practice what I have learned from the training.

Personal Outcomes-Negative Items

Original Item	Source	Final Item Used in Pilot Test
Performance appraisal will be jeopardised.	Focus group interview	My job evaluation report will be jeopardised if I do not put into practice what I have learned from the training.
Do you think it would be noticed if a newly trained employee in your department was not performing his or her job as taught in training?	Richman-Hirsch (2001)	I will be seen as skeptical if I do not put into practice what I have learned from the training.
If I did not implement new skills I learned in training programs, my supervisor would be critical of me.	Burke and Baldwin (1999)	I will be reprimanded if I do not put into practice what I have learned.
Will be in disgraceful.	Focus group interview	I will be disgraceful if I do not put into practice what I have learned.
Will be regarded as a waste.	Focus group interview	It is a waste by sending me to the training if I do not put into practice what I have learned from the training.

Supervisor Sanctions Items

Original Item	Source	Final Item Used in Pilot Test
My supervisor opposes the use of the techniques I learned in training. My advisor opposes the use of the techniques learned in training that I bring to the unit.	Holton et al. (2000) Bates et al. (2000)	My supervisor/manager will oppose any application of technique that I have learned from the training.
Will be criticised.	Focus group interview	I will be criticised by my supervisor/manager if I put into

		practice what I have learned from the training.
Supervisor says that the newly learned method is against with the existing ones.	Focus group interview	My supervisor/manager will instruct me with a method that is against to what I have learned from the training.
Supervisor says that the current technique is better.	Focus group interview	My supervisor/manager will say that the existing techniques are better than the techniques I have learned.
Supervisor says that the new technique won't give any benefit.	Focus group interview	My supervisor/manager will say that the application of what I have learned from the training will not bring any benefit.

Personal Capacity for Transfer Items

Original Item	Source	Final Item Used in Pilot Test
I have psychical capability.	Focus group interview	I have a psychical capability to put into practice what I have learned from the training in carrying out duties.
I have mental capability.	Focus group interview	I have a mental capability to put into practice what I have learned from the training in carrying out duties.
I have the time.	Focus group interview	I have time to put into practice what I have learned in carrying out duties.
My workload allows me time to try the new things I have learned.	Holton et al. (2000) Holton et al. (2003)	I am not prevented with workload to put into practice what I have learned.
I am capable.	Focus group interview	I am capable to put into practice what I have learned from the training even though I am busy.

Opportunity to Use Items

Original Item	Source	Final Item Used in Pilot Test
The financial resources are available that will allow me to use skills acquired in training. Management is willing to spend money on training. Inadequate financial resources hamper my ability to apply new skills learned in training back to	Seyler et al. (1998) Burke and Baldwin (1999) Facteau et al. (1995)	My employer has allocated an enough budget for me to put into practice what I have learned from the training.

my job.		
In this store, the job of a newly trained manager is designed in such a way as to allow them to use the skills taught in training.	Tracey et al. (1995)	My employer has given me a duty that requires practicing what I have learned from the training.
Generally, I can get the resources I need for my work. The resources I need to use what I learned will be available to me after training. Equipment is available in this unit that allows me to use skills I gained in training. In my workplace, resources are available to help me apply managerial skills.	Awoniyi et al. (2002) Holton et al. (2000) Bates et al. (2000) Enos et al. (2003)	My employer has allocated the required resources for me to put into practice what I have learned from the training.
When resources allocated are sufficient.	Focus group interview	The required resources allocated by my employer are sufficient for me to put into practice what I have learned from the training.
		*The resources are not sufficient for me to put into practice what I have learned.

Note : * Negative worded item.

Content Validity Items

Original Item	Source	Final Item Used in Pilot Test
The content of most training programs I attend has practical applicability to my job. The training was very relevant to my job.	Burke and Baldwin (1999) Warr and Bunce (1995)	The training contents are related to the need of my duties.
What is taught in training closely matches my job requirements.	Holton et al. (2000)	The training contents are matched to the need of my duties.
Training contents are good for the duties.	Focus group interview	The training contents are good for the duties.
Training contents are suitable for the duties.	Focus group interview	The training contents are suitable for the duties.
Training contents are important to the need of my duties.	Focus group interview	The training contents are important to the need of my duties.
Training contents are needed for	Focus group interview	The training contents are

the need of my duties.		something needed for the need of my duties.
		*The training contents do not fulfil the need for duties.

Note : * Negative worded items

Transfer Design Items

Original Item	Source	Final Item Used in Pilot Test
The activities and exercises the trainers used helped me know how to apply my learning on the job.	Holton et al. (2000)	The training has been delivered by using examples that correspond with the need for duties.
Using basic principles.	Focus group interview	The training has been delivered by using basic principles that are suitable for duties.
Facilitate me using what I have learned.	Focus group interview	The training has been designed to facilitate me using what I have learned.
The material on my training courses was taught in the appropriate manner.	Orpen (1999)	The training has been delivered in a straightforward approach.
Delivered systematically.	Focus group interview	The training has been delivered systematically.
Delivered effectively.	Focus group interview	The training has been delivered effectively.

Sharing Behaviour Items

Original Item	Source	Final Item Used in Pilot Test
Having the opportunity to share.	Focus group interview Ajzen (1991)	I always have the opportunity to share knowledge and skills that have been learned from the training into the workplace.
Always being invited to share.	Focus group interview Ajzen (1991)	I always being invited to share knowledge and skills that have been learned from the training into the workplace.
Discuss with colleagues.	Focus group interview Ajzen (1991)	I always discuss with my colleagues regarding knowledge and skills that have been learned from the training into the workplace.
Share what I learned from the training.	Focus group interview Ajzen (1991)	I always share knowledge and skills that have been learned from the training.
Sharing knowledge in the past.	Focus group interview Ajzen (1991)	I share knowledge and skills that have been learned from the

		training into the workplace in the past.
		*I do not share anything in the workplace.

Note : * Negative worded item.

Intention to Share Items

Original Item	Source	Final Item Used in Pilot Test
I have the desire to share my knowledge.	Focus group interview Ajzen (1991)	I have the desire to share knowledge and skills that have been learned from the training into the workplace.
I will try to share my knowledge.	Focus group interview Ajzen (1991)	I will try to share knowledge and skills that have been learned from the training into the workplace.
I plan to share my knowledge.	Focus group interview Ajzen (1991)	I plan to share knowledge and skills that have been learned from the training into the workplace.
I hope to share my knowledge.	Focus group interview Ajzen (1991)	I hope to share knowledge and skills that have been learned from the training into the workplace.
I decide to share my knowledge.	Focus group interview Ajzen (1991)	I decide to share knowledge and skills that have been learned from the training into the workplace.

Attitude Toward Knowledge Sharing Items

Original Item	Source	Final Item Used in Pilot Test
Knowledge sharing is good.	Focus group interview Ajzen (1991)	Sharing of knowledge and skills that have been learned during training are good.
Knowledge sharing can improve job performance.	Focus group interview Ajzen (1991)	Sharing of knowledge and skills that have been learned during training can improve job performance.
Knowledge sharing can bring benefits.	Focus group interview Ajzen (1991)	Sharing of knowledge and skills that have been learned during training can bring benefits.
Knowledge sharing is advantageous.	Focus group interview Ajzen (1991)	Sharing of knowledge and skills that have been learned during training are advantageous.
		*Sharing of knowledge and skills that have been learned

		during training in the workplace will not bring any benefits.

Note : * Negative worded items.

Subjective Norm Toward Knowledge Sharing Items

Original Item	Source	Final Item Used in Pilot Test
Those people who are close to me.	Focus group interview Ajzen (1991)	Those who are close to me think that I should share knowledge and skills that have been learned from the training into the workplace.
Those people who are important to me.	Focus group interview Ajzen (1991)	Those who are important to me think that I should share knowledge and skills that have been learned from the training into the workplace.
Those people who are of the same mind with me.	Focus group interview Ajzen (1991)	Those who are of the same mind with me think that I should share knowledge and skills that have been learned from the training into the workplace.
My supervisor/manager asked me to share knowledge.	Focus group interview Ajzen (1991)	My supervisor/manager thinks that I should share knowledge and skills that have been learned from the training into the workplace.
My head department asked me to share knowledge.	Focus group interview Ajzen (1991)	My head department thinks that I should share knowledge and skills that have been learned from the training into the workplace.

Perceived Behavioural Control Toward Knowledge Sharing Items

Original Item	Source	Final Item Used in Pilot Test
I have time to share.	Focus group interview Ajzen (1991)	I have time to share knowledge and skills that have been learned from the training into the workplace.
I have friends to share.	Focus group interview Ajzen (1991)	I have friends who like to share knowledge with me.
Workload is not a problem for me to share.	Focus group interview Ajzen (1991)	I can still share knowledge and skills that have been learned from the training into the workplace even though I am busy.
I can share knowledge anytime.	Focus group interview Ajzen (1991)	I can share knowledge and skills that have been learned from the

		training into the workplace at any time.
I share knowledge without any enforcement.	Focus group interview Ajzen (1991)	I can share knowledge and skills that have been learned from the training into the workplace without any enforcement.

APPENDIX C

LETTER OF APPROVAL
FOR THE PILOT AND MAIN STUDY DATA COLLECTION

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013-2336357
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Ballarat Road
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Shahril Bin Baharim
25 Jalan LEP 5/7, Sek. 5
Taman Lestari Putra
Bandar Putra Permai
43300 Puchong
Selangor

VICTORIA UNIVERSITY OF TECHNOLOGY

Encik Mohd Salleh bin Mahmud
Akauntan Negara Malaysia
Jabatan Akauntan Negara Malaysia
Aras 1-8, Lot 2G1A, Precint 2
Komplek Kementerian Kewangan
Pusat Pentadbiran Kerajaan Persekutuan
62100 PUTRAJAYA

18 Julai 2005

Tuan,

PERMOHONAN MENJALANKAN 'PILOT STUDY'.

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Saya, **SHAHRIL BIN BAHARIM**, adalah pelajar Ph.D di School of Management, Victoria University of Technology, Australia. Kelulusan dari pihak tuan dipohon, agar saya dibenarkan untuk mengedarkan soal selidik kepada kakitangan kerajaan yang menghadiri latihan di Institut Perakaunan Negara (IPN) untuk tujuan 'Pilot Study'. 'Pilot Study' yang akan dijalankan ini adalah sebahagian dari proses pembangunan skala pengukuran yang akan digunakan untuk tujuan kutipan data bagi maksud penyediaan thesis. Soal selidik yang akan diedarkan adalah berkaitan dengan faktor-faktor yang memberi kesan terhadap pemindahan latihan.

3. Kajian ini adalah penting kerana ia dapat memberikan maklumat yang berguna berkaitan dengan faktor-faktor yang memberi kesan terhadap pemindahan latihan di dalam sektor awam dan untuk membangunkan model penilaian latihan yang baru dengan mengambilkira faktor perkongsian pengetahuan.

4. Sehubungan dengan itu, kerjasama pihak tuan berhubung perkara di atas amat dihargai. Jika terdapat sebarang pertanyaan, saya boleh dihubungi di e-mail shahril.baharim@research.vu.edu.au atau terus kepada penyelia saya, Dr. Bernadine Van Gramberg, School of Management, Victoria University of Technology, Australia; email : Bernadine.VanGramberg@vu.edu.au , Tel: 613 9919 4489 untuk sebarang pengesahan.

5. Kelulusan tuan berhubung dengan perkara ini saya dahulu dengan ucapan terima kasih.

Yang benar,

SHAHRIL BIN BAHARIM

S.K. 1) Puan Rihatun Abddah binti Meor Zainal Abidin
Pengarah IPN

Pn Abddah
Tiada halangan.
2/8.

MOHD SALLEH BIN MAHMUD
Akauntan Negara Malaysia

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Ruj. Tuan *(Your Ref)*:
Ruj. Kami *(Our Ref)*: INTAN: 180/2 JLD. 35
Tarikh *(Date)*: 17th March 2005
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PERMISSION TO CONDUCT RESEARCH AT NATIONAL INSTITUTE OF PUBLIC ADMINISTRATION (INTAN), MALAYSIA

Referring to your letter dated 10 March 2005, we would like to inform you that INTAN has granted a permission for you to conduct research at the INTAN. However you are advised to follow all the government necessary procedure in doing your research.

Thank you.

Yours sincerely,

(ZAINAL BIN YANG)
Registrar
National Institute of Public Administration (INTAN)
Public Service Department
Malaysia

APPENDIX D

LETTER OF APPROVAL FROM ETHICS COMMITTEE, VICTORIA UNIVERSITY

VICTORIA UNIVERSITY
A NEW SCHOOL OF THOUGHT

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12 December 2006

Mr Shahril Baharim
PhD Student
School of Management
Faculty of Business and Law

Dear Mr Baharim,

I am writing to confirm that, at its meeting on July 21 2005, the Human Research Ethics Committee, Faculty of Business and Law approved the resubmitted application:

BHREC 2005/03 – The Influence of Knowledge Sharing on Transfer of Training: A Malaysian Public Sector Context (Dr Bernadine Van Gramberg/Mr Shahril Baharim)

The period for data collection is approved from 1 March 2005 to 28 February 2006.

We wish you every success with your research.

Yours sincerely,

Tina Jeggo

Tina Jeggo
Secretary, Human Research Ethics Committee
Faculty of Business and Law

APPENDIX E

THE NUMBER OF DISTRIBUTED AND RETURNED QUESTIONNAIRES

The Number of Distributed and Returned Questionnaires

	Training Type	Training Category	Distributed	Returned	Complete (Usable)	Incomplete
1	Quality report writing	General training	24	24	22	2
2	Leadership and learning organisation	Management training	26	17	11	6
3	Basic financial management	General training	19	19	15	4
4	Human resource management in the public sector	Management training	19	14	12	2
5	Strategic cost management	Management training	27	23	17	6
6	Business forecasting	General training	6	6	3	3
7	Performance management course	Management training	15	11	10	1
8	Visual Basic (Basic)	Computer training	14	11	10	1
9	Organisation management course	Management training	14	11	6	5
10	Desktop productivity-Database (Advanced)	Computer training	14	11	10	1
11	Effective writing skills	General training	14	13	9	4
12	English for functional purposes	General training	24	23	12	11
13	Management of trust accounts (for support groups)	General training	21	17	11	6
14	Integrity in the public sector	General training	31	24	21	3
15	Strategic management	Management training	22	19	15	4
16	Electronic government	Computer training	29	22	20	2
17	Induction training	General training	57	56	53	3
18	Better spoken english	General training	33	19	17	2
19	Financial statement analysis	General training	28	18	17	1
			437	**358**	**291**	**67**

APPENDIX F

THE SUMMARY OF
MAIN STUDY QUESTIONNAIRE

The Summary of Main Study Questionnaire

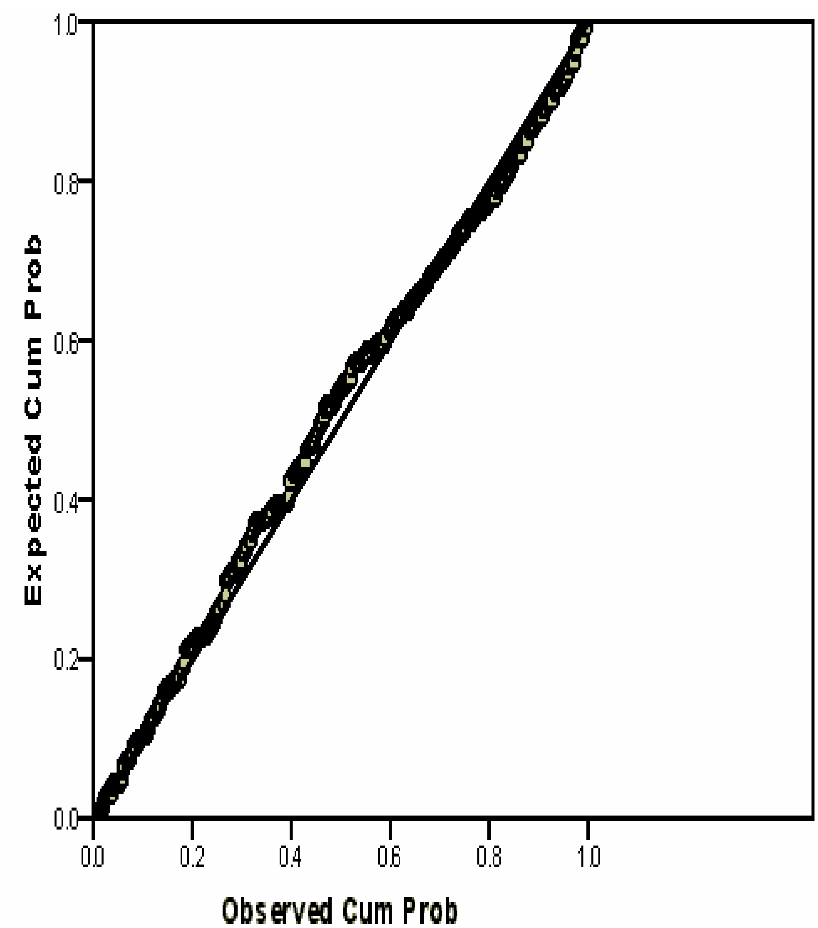
Scales	Items number
1. Learner readiness	1,2,5,8,9
2. Motivation for transfer	3,10,6,12
3. Personal outcomes-positive	4,7,11,13
4. Personal outcomes-negative	14,18,19,22
5. Personal capacity for transfer	15,20,21
6. Peer support	16,17,23,24
7. Supervisor support	25,26,29,30
8. Supervisor sanctions	27,28,31,32
9. Perceived content validity	33,40,41,42,**<u>45</u>**
10. Transfer design	34,35,36,37
11. Opportunity to use learning	38,39,43,44
12. Transfer effort-performance expectations	46,47,50,51,**<u>53</u>**
13. Performance-outcomes expectations	48,49,52,54
14. Openness to change	55,56,57,58
15. Performance- self efficacy	59,60,63,64
16. Feeback	61,62,65,66
17. Attitude toward knowledge sharing.	67,68,69,72,**<u>74</u>**
18. Subjective norm toward knowledge sharing.	70,71,73,75
19. Perceived behavioural control toward knowledge sharing.	76,77,78
20. Intention to share	79,80,85,86
21. Sharing Behaviour	81,82,83,84,**<u>87</u>**
Total items	**87 items**

Note : Negatively worded items were **<u>bold underline.</u>**

APPENDIX H

NORMAL PROBABILITY PLOT FOR THE ASSUMPTION OF NORMALITY

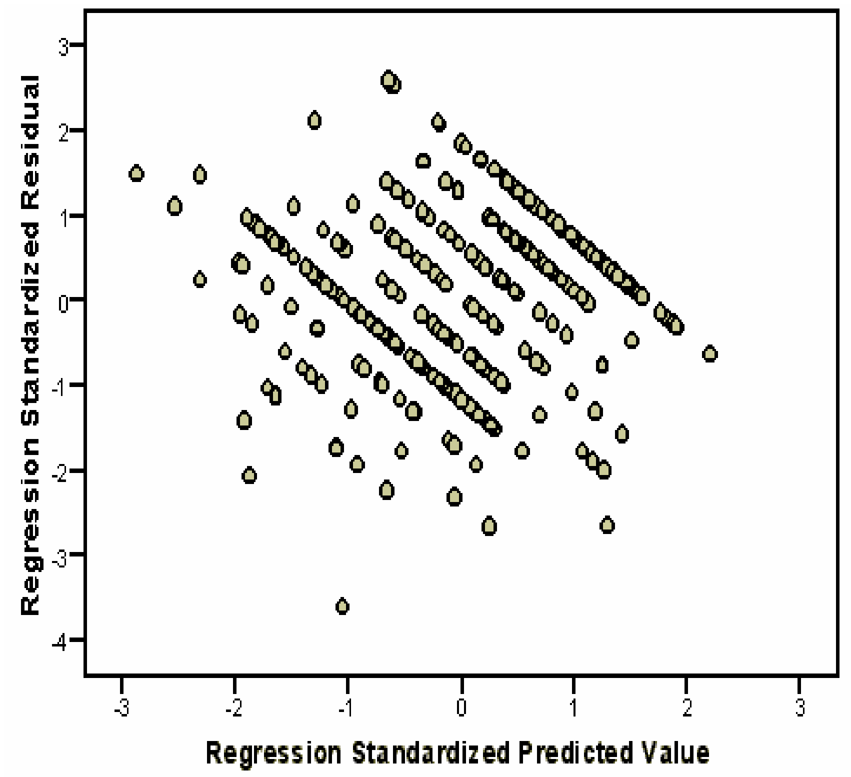
Normal Probability Plot



APPENDIX I

SCATTER PLOT FOR THE ASSUMPTION OF LINEARITY, HOMOSCEDASTICITY AND INDEPENDENCE OF RESIDUAL

Scatter Plot



APPENDIX J

ITEM-TO-TOTAL CORRELATIONS, INTER-ITEM CORRELATIONS AND CRONBACH ALPHA FOR EACH CONSTRUCT

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Learner Readiness Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.731	.792	5

Inter-Item Correlation Matrix

	q1	q2	q5	q8	q9
q1	1.000	.273	.420	.372	.449
q2	.273	1.000	.340	.332	.359
q5	.420	.340	1.000	.645	.590
q8	.372	.332	.645	1.000	.548
q9	.449	.359	.590	.548	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q1	17.49	5.416	.465	.250	.701
q2	17.94	3.635	.411	.171	.803
q5	17.67	4.787	.634	.512	.642
q8	17.76	4.859	.602	.468	.653
q9	17.58	5.072	.627	.445	.656

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Performance-Self Efficacy Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.832	.836	4

Inter-Item Correlation Matrix

	q59	q60	q63	q64
q59	1.000	.651	.415	.425
q60	.651	1.000	.535	.525
q63	.415	.535	1.000	.810
q64	.425	.525	.810	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q59	12.46	2.173	.570	.434	.834
q60	12.43	2.252	.688	.515	.778
q63	12.56	2.157	.701	.672	.770
q64	12.56	2.137	.701	.669	.770

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Motivation to Transfer Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.806	.808	4

Inter-Item Correlation Matrix

	q3	q6	q10	q12
q3	1.000	.609	.495	.382
q6	.609	1.000	.594	.505
q10	.495	.594	1.000	.495
q12	.382	.505	.495	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q3	12.95	2.259	.594	.400	.770
q6	12.94	2.186	.712	.517	.713
q10	12.94	2.307	.646	.424	.746
q12	13.19	2.310	.544	.316	.796

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Transfer Effort-Performance Expectations Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.846	.846	4

Inter-Item Correlation Matrix

	q46	q47	q50	q51
q46	1.000	.782	.503	.473
q47	.782	1.000	.521	.525
q50	.503	.521	1.000	.671
q51	.473	.525	.671	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q46	12.20	2.627	.700	.624	.798
q47	12.11	2.609	.737	.646	.781
q50	12.17	2.913	.657	.499	.816
q51	12.18	2.890	.642	.493	.822

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Performance-Outcomes Expectations Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.789	.789	4

Inter-Item Correlation Matrix

	q48	q49	q52	q54
q48	1.000	.491	.603	.445
q49	.491	1.000	.418	.348
q52	.603	.418	1.000	.591
q54	.445	.348	.591	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q48	10.15	4.007	.641	.439	.715
q49	9.71	4.763	.501	.272	.782
q52	10.36	3.872	.691	.500	.688
q54	10.39	4.067	.569	.368	.754

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Feedback Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.809	.811	4

Inter-Item Correlation Matrix

	q61	q62	q65	q66
q61	1.000	.446	.410	.450
q62	.446	1.000	.499	.503
q65	.410	.499	1.000	.792
q66	.450	.503	.792	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q61	11.48	3.775	.510	.269	.813
q62	11.55	3.490	.577	.334	.785
q65	11.35	3.264	.700	.642	.723
q66	11.31	3.399	.731	.654	.713

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Peer Support Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.875	.876	4

Inter-Item Correlation Matrix

	q16	q17	q23	q24
q16	1.000	.737	.625	.623
q17	.737	1.000	.678	.561
q23	.625	.678	1.000	.601
q24	.623	.561	.601	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q16	10.81	3.855	.767	.614	.826
q17	10.74	3.764	.761	.622	.827
q23	10.74	3.781	.728	.539	.841
q24	10.78	3.882	.671	.463	.864

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Supervisor Support Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.855	.858	4

Inter-Item Correlation Matrix

	q25	q26	q29	q30
q25	1.000	.832	.652	.477
q26	.832	1.000	.613	.496
q29	.652	.613	1.000	.540
q30	.477	.496	.540	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q25	11.30	3.674	.779	.725	.781
q26	11.37	3.607	.768	.708	.785
q29	11.25	4.028	.702	.499	.816
q30	11.57	3.998	.562	.336	.875

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Openness to Change Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.925	.926	4

Inter-Item Correlation Matrix

	q55	q56	q57	q58
q55	1.000	.819	.770	.635
q56	.819	1.000	.904	.711
q57	.770	.904	1.000	.716
q58	.635	.711	.716	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q55	8.23	7.419	.802	.679	.911
q56	8.22	6.682	.903	.858	.876
q57	8.26	6.557	.882	.830	.883
q58	8.23	7.047	.731	.540	.936

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Personal Outcomes-Positive Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.720	.729	4

Inter-Item Correlation Matrix

	q4	q7	q11	q13
q4	1.000	.629	.265	.258
q7	.629	1.000	.384	.353
q11	.265	.384	1.000	.522
q13	.258	.353	.522	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q4	11.63	3.159	.466	.397	.686
q7	11.75	2.804	.574	.456	.624
q11	12.32	2.439	.519	.318	.657
q13	12.46	2.594	.504	.301	.663

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Personal Outcomes-Negative Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.789	.794	4

Inter-Item Correlation Matrix

	q14	q18	q19	q22
q14	1.000	.651	.281	.531
q18	.651	1.000	.428	.685
q19	.281	.428	1.000	.364
q22	.531	.685	.364	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q14	9.71	6.680	.594	.437	.739
q18	9.84	6.067	.758	.608	.655
q19	9.09	7.196	.414	.193	.832
q22	9.76	6.416	.656	.488	.708

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Supervisor Sanctions Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.870	.871	4

Inter-Item Correlation Matrix

	q27	q28	q31	q32
q27	1.000	.774	.593	.517
q28	.774	1.000	.632	.580
q31	.593	.632	1.000	.668
q32	.517	.580	.668	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q27	6.69	6.932	.726	.618	.834
q28	6.74	6.863	.778	.659	.812
q31	6.73	7.262	.728	.549	.833
q32	6.64	7.390	.664	.488	.857

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Personal Capacity for Transfer Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.803	.816	3

Inter-Item Correlation Matrix

	q15	q20	q21
q15	1.000	.526	.504
q20	.526	1.000	.757
q21	.504	.757	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q15	8.27	1.135	.550	.303	.862
q20	8.03	1.206	.724	.601	.660
q21	7.99	1.241	.707	.589	.680

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Opportunity to Use Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.831	.831	4

Inter-Item Correlation Matrix

	q38	q39	q43	q44
q38	1.000	.454	.531	.457
q39	.454	1.000	.546	.547
q43	.531	.546	1.000	.773
q44	.457	.547	.773	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q38	10.14	5.602	.556	.321	.830
q39	10.51	5.154	.605	.368	.811
q43	10.34	4.716	.758	.647	.739
q44	10.34	5.039	.725	.621	.757

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Content Validity Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.783	.806	5

Inter-Item Correlation Matrix

	q33	q40	q41	q42	q45
q33	1.000	.360	.456	.469	.269
q40	.360	1.000	.707	.603	.365
q41	.456	.707	1.000	.757	.218
q42	.469	.603	.757	1.000	.335
q45	.269	.365	.218	.335	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q33	15.89	6.160	.485	.260	.767
q40	16.14	5.112	.675	.549	.704
q41	16.03	5.164	.685	.692	.702
q42	16.08	5.328	.716	.617	.698
q45	16.44	5.336	.362	.202	.838

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Transfer Design Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.857	.860	4

Inter-Item Correlation Matrix

	q34	q35	q36	q37
q34	1.000	.609	.532	.484
q35	.609	1.000	.754	.641
q36	.532	.754	1.000	.611
q37	.484	.641	.611	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q34	12.46	2.346	.612	.393	.855
q35	12.55	2.200	.799	.660	.778
q36	12.53	2.271	.743	.601	.801
q37	12.53	2.195	.665	.457	.835

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Sharing Behaviour Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.826	.834	4

Inter-Item Correlation Matrix

	q81	q82	q83	q84
q81	1.000	.574	.472	.462
q82	.574	1.000	.685	.572
q83	.472	.685	1.000	.578
q84	.462	.572	.578	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q81	11.96	3.036	.583	.359	.824
q82	11.80	3.204	.742	.571	.743
q83	11.78	3.356	.687	.524	.768
q84	11.79	3.327	.628	.410	.791

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Intention to Share Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.859	.859	4

Inter-Item Correlation Matrix

	q79	q80	q85	q86
q79	1.000	.711	.487	.491
q80	.711	1.000	.547	.593
q85	.487	.547	1.000	.795
q86	.491	.593	.795	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q79	12.47	2.167	.647	.519	.844
q80	12.54	1.905	.717	.585	.816
q85	12.47	1.933	.715	.645	.816
q86	12.50	1.934	.743	.667	.804

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Attitude Toward Knowledge Sharing Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.908	.908	4

Inter-Item Correlation Matrix

	q67	q68	q69	q72
q67	1.000	.816	.768	.583
q68	.816	1.000	.814	.644
q69	.768	.814	1.000	.643
q72	.583	.644	.643	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q67	13.09	2.279	.809	.699	.875
q68	13.09	2.164	.861	.762	.856
q69	13.08	2.273	.837	.712	.866
q72	13.13	2.498	.670	.458	.923

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Subjective Norm Toward Knowledge Sharing Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.793	.798	4

Inter-Item Correlation Matrix

	q70	q71	q73	q75
q70	1.000	.788	.558	.350
q71	.788	1.000	.516	.297
q73	.558	.516	1.000	.474
q75	.350	.297	.474	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q70	11.85	3.331	.710	.655	.690
q71	11.87	3.390	.655	.630	.716
q73	11.99	3.400	.641	.413	.722
q75	12.04	3.698	.433	.236	.830

Item-to-Total Correlations, Inter-Item Correlations and Cronbach Alpha for Perceived Behavioural Control Toward Knowledge Sharing Construct

Case Processing Summary

		N	%
Cases	Valid	291	100.0
	Excluded[a]	0	.0
	Total	291	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.771	.779	3

Inter-Item Correlation Matrix

	q76	q77	q78
q76	1.000	.604	.417
q77	.604	1.000	.597
q78	.417	.597	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
q76	8.12	1.410	.561	.370	.739
q77	8.10	1.345	.713	.510	.586
q78	8.35	1.249	.562	.362	.752

APPENDIX K

CONSTRUCT RELIABILITY AND VARIANCE EXTRACTED WORKINGS

Learner Readiness Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q1	0.54	0.2916	0.7084
q2	0.45	0.2025	0.7975
q5	0.81	0.6561	0.3439
q8	0.76	0.5776	0.4224
q9	0.74	0.5476	0.4524
	$\sum = 3.30$	$\sum = 2.2754$	$\sum = 2.7246$

Construct Reliability = $(3.30)^2 \div [(3.30)^2 + 2.7246] = 0.799877$

Variance Extracted = $2.2754 \div (2.2754 + 2.7246) = 0.45508$

Performance-Self Efficacy Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q59	0.47	0.2209	0.7791
q60	0.59	0.3481	0.6519
q63	0.90	0.8100	0.1900
q64	0.89	0.7921	0.2079
	$\sum = 2.850$	$\sum = 2.1711$	$\sum = 1.8289$

Construct Reliability = $(2.850)^2 \div [(2.850)^2 + 1.8289] = 0.816217$

Variance Extracted = $2.1711 \div (2.1711 + 1.8289) = 0.542775$

Motivation to Transfer Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q3	0.70	0.4900	0.5100
q6	0.84	0.7056	0.2944
q10	0.72	0.5184	0.4816
q12	0.61	0.3721	0.6279
	$\sum = 2.870$	$\sum = 2.0861$	$\sum = 1.9139$

Construct Reliability = $(2.870)^2 \div [(2.870)^2 + 1.9139] = 0.8111453$

Variance Extracted = $2.0861 \div (2.0861 + 1.9139) = 0.521525$

Transfer Effort-Performance Expectations Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q46	0.85	0.7225	0.7791
q47	0.91	0.8281	0.6519
q50	0.58	0.3364	0.1900
q51	0.57	0.3249	0.2079
	$\sum = 2.910$	$\sum = 2.2119$	$\sum = 1.7881$

Construct Reliability = $(2.910)^2 \div [(2.910)^2 + 1.7881] = 0.825657$

Variance Extracted = $2.2119 \div (2.2119 + 1.7881) = 0.552975$

Performance-Outcomes Expectations Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q48	0.68	0.4624	0.5376
q49	0.48	0.2304	0.7696
q52	0.88	0.7744	0.2256
q54	0.67	0.4489	0.5511
	$\sum = 2.710$	$\sum = 1.9161$	$\sum = 2.0839$

Construct Reliability = $(2.710)^2 \div [(2.710)^2 + 2.0839] = 0.778967$

Variance Extracted = $1.9161 \div (1.9161 + 2.0839) = 0.479025$

Feedback Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
Q61	0.49	0.2401	0.7599
Q62	0.56	0.3136	0.6864
Q65	0.87	0.7569	0.2431
Q66	0.91	0.8281	0.1719
	$\sum = 2.830$	$\sum = 2.1387$	$\sum = 1.8613$

Construct Reliability = $(2.830)^2 \div [(2.830)^2 + 1.8613] = 0.811422$

Variance Extracted = $2.1387 \div (2.1387 + 1.8613) = 0.534675$

Peer Support Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q46	0.91	0.8281	0.1719
q47	0.81	0.6561	0.3439
q50	0.85	0.7225	0.2775
q51	0.70	0.4900	0.5100
	$\sum = 3.270$	$\sum = 2.6967$	$\sum = 1.3033$

Construct Reliability = $(3.270)^2 \div [(3.270)^2 + 1.3033]$ = 0.891357

Variance Extracted = 2.6967 ÷(2.6967 + 1.3033) = 0.674175

Supervisor Support Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q25	0.92	0.8464	0.1536
q26	0.90	0.8100	0.1900
q29	0.71	0.5041	0.4959
q30	0.55	0.3025	0.6975
	$\sum = 3.080$	$\sum = 2.463$	$\sum = 1.537$

Construct Reliability = $(3.080)^2 \div [(3.080)^2 + 1.537]$ = 0.860569

Variance Extracted = 2.463 ÷(2.463 + 1.537) = 0.61575

Openness to Change Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q55	0.84	0.7056	0.2944
q56	0.97	0.9409	0.0591
q57	0.93	0.8649	0.1351
q58	0.75	0.5625	0.4375
	$\sum = 3.490$	$\sum = 3.0739$	$\sum = 0.9261$

Construct Reliability = $(3.490)^2 \div [(3.490)^2 + 0.9261]$ = 0.929339

Variance Extracted = 3.0739 ÷(3.0739 + 0.9261) = 0.768475

Personal Outcomes-Positive Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q4	0.67	0.4489	0.5511
q7	0.94	0.8836	0.1164
q11	0.41	0.1681	0.8319
q13	0.38	0.1444	0.8556
	$\sum = 2.400$	$\sum = 1.645$	$\sum = 2.355$

Construct Reliability = $(2.400)^2 \div [(2.400)^2 + 2.355]$ = 0.709797

Variance Extracted = $1.645 \div (1.645 + 2.355) = 0.41125$

Personal Outcomes-Negative Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q14	0.70	0.4900	0.5100
q18	0.92	0.8464	0.1536
q19	0.46	0.2116	0.7884
q22	0.75	0.5625	0.4375
	$\sum = 2.830$	$\sum = 2.1105$	$\sum = 1.8895$

Construct Reliability = $(2.830)^2 \div [(2.830)^2 + 1.8895]$ = 0.809111

Variance Extracted = $2.1105 \div (2.1105 + 1.8895) = 0.527625$

Supervisor Sanctions Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q27	0.85	0.7225	0.2775
q28	0.92	0.8464	0.1536
q31	0.69	0.4761	0.5239
q32	0.63	0.3969	0.6031
	$\sum = 3.090$	$\sum = 2.4419$	$\sum = 1.5581$

Construct Reliability = $(3.090)^2 \div [(3.090)^2 + 1.5581]$ = 0.859709

Variance Extracted = $2.4419 \div (2.4419 + 1.5581) = 0.610475$

Personal Capacity for Transfer Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q15	0.59	0.3481	0.6519
q20	0.89	0.7921	0.2079
q21	0.85	0.7225	0.2775
	$\sum = 2.330$	$\sum = 1.8627$	$\sum = 1.1373$

Construct Reliability = $(2.330)^2 \div [(2.330)^2 + 1.1373]$ = 0.826795

Variance Extracted = 1.8627 ÷(1.8627 + 1.1373) = 0.6209

Opportunity to Use Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q38	0.57	0.3249	0.6751
q39	0.62	0.3844	0.6156
q43	0.91	0.8281	0.1719
q44	0.85	0.7225	0.2775
	$\sum = 2.950$	$\sum = 2.2599$	$\sum = 1.7401$

Construct Reliability = $(2.950)^2 \div [(2.950)^2 + 1.7401]$ = 0.833365

Variance Extracted = 2.2599 ÷(2.2599 + 1.7401) = 0.564975

Content Validity Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q33	0.51	0.2601	0.7399
q40	0.76	0.5776	0.4224
q41	0.93	0.8649	0.1351
q42	0.81	0.6561	0.3439
q45	0.45	0.2025	0.7975
	$\sum = 3.460$	$\sum = 2.5612$	$\sum = 2.4388$

Construct Reliability = $(3.460)^2 \div [(3.460)^2 + 2.4388]$ = 0.830761

Variance Extracted = 2.5612 ÷(2.5612 + 2.4388) = 0.51224

Transfer Design Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q34	0.66	0.4356	0.5644
q35	0.90	0.8100	0.1900
q36	0.83	0.6889	0.3111
q37	0.72	0.5184	0.4816
	$\sum = 3.110$	$\sum = 2.4529$	$\sum = 1.5471$

Construct Reliability = $(3.110)^2 \div [(3.110)^2 + 1.5471] = 0.862102$

Variance Extracted = $2.4529 \div (2.4529 + 1.5471) = 0.613225$

Sharing Behaviour Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q81	0.64	0.4096	0.5904
q82	0.86	0.7396	0.2604
q83	0.80	0.6400	0.3600
q84	0.69	0.4761	0.5239
	$\sum = 2.990$	$\sum = 2.2653$	$\sum = 1.7347$

Construct Reliability = $(2.990)^2 \div [(2.990)^2 + 1.7347] = 0.837496$

Variance Extracted = $2.2653 \div (2.2653 + 1.7347) = 0.566325$

Intention to Share Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q79	0.54	0.2916	0.7084
q80	0.64	0.4096	0.5904
q85	0.86	0.7396	0.2604
q86	0.92	0.8464	0.1536
	$\sum = 2.960$	$\sum = 2.2872$	$\sum = 1.7128$

Construct Reliability = $(2.960)^2 \div [(2.960)^2 + 1.7128] = 0.836478$

Variance Extracted = $2.2872 \div (2.2872 + 1.7128) = 0.5718$

Attitude Toward Knowledge Sharing Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q67	0.87	0.7569	0.2431
q68	0.93	0.8649	0.1351
q69	0.88	0.7744	0.2256
q72	0.70	0.4900	0.5100
	$\sum = 3.380$	$\sum = 2.8862$	$\sum = 1.1138$

Construct Reliability = $(3.380)^2 \div [(3.380)^2 + 1.1138] = 0.911167$

Variance Extracted = $2.8862 \div (2.8862 + 1.1138) = 0.72155$

Subjective Norm Toward Knowledge Sharing Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q70	0.93	0.8649	0.1351
q71	0.85	0.7225	0.2775
q73	0.60	0.3600	0.6400
q75	0.37	0.1369	0.8631
	$\sum = 2.750$	$\sum = 2.0843$	$\sum = 1.9157$

Construct Reliability = $(2.750)^2 \div [(2.750)^2 + 1.9157] = 0.797884$

Variance Extracted = $2.0843 \div (2.0843 + 1.9157) = 0.521075$

Perceived Behavioural Control Toward Knowledge Sharing Construct

Item	Standardised Loadings	(Standardised Loadings)^2	Indicator Measurement Error = 1 – (Standardised Loadings)^2
q76	0.65	0.4225	0.5775
q77	0.93	0.8649	0.1351
q78	0.64	0.4096	0.5904
	$\sum = 2.220$	$\sum = 1.697$	$\sum = 1.3030$

Construct Reliability = $(2.220)^2 \div [(2.220)^2 + 1.3030] = 0.790898$

Variance Extracted = $1.697 \div (1.697 + 1.3030) = 0.565667$

APPENDIX L1 – L6

MULTIVARIATE ANALYSIS (MANOVA) ACROSS TRAINING TYPES AND DEMOGRAPHICS

APPENDIX L1:
Multivariate Analysis of Variance (MANOVA) Across Training Types

Category Of Variables	Variables Name	Training Type								F	P
		Total		General		Management/ Leadership		Computer			
		Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Dependent Variable	Motivation to transfer	4.334	0.486	4.367	0.474	4.310	0.501	4.231	0.508	1.391	0.251
Secondary Influence Variables	Learner readiness	4.422	0.528	4.410	0.537	4.485	0.548	4.365	0.444	0.777	0.461
	Performance-self efficacy	4.168	0.479	4.168	0.489	4.194	0.414	4.119	0.546	0.312	0.732
Expected Utility Variables	Transfer effort-performance expectations	4.054	0.540	4.082	0.530	4.000	0.486	4.031	0.666	0.678	0.509
	Performance-Outcomes Expectations	3.385	0.659	3.394	0.648	3.254	0.661	3.575	0.666	3.144	0.045
Transfer Climate Variables	Feedback	3.808	0.603	3.857	0.558	3.592	0.671	3.969	0.586	6.853	***0.001***
	Peer support	3.589	0.638	3.615	0.580	3.454	0.679	3.713	0.777	2.509	0.083
	Supervisor support	3.791	0.637	3.853	0.599	3.620	0.654	3.819	0.727	3.512	0.031
	Openness to change	2.745	0.867	2.736	0.811	2.806	0.952	2.675	0.961	0.316	0.729
	Personal outcomes-positive	4.013	0.528	4.043	0.527	3.919	0.546	4.044	0.496	1.486	0.228
	Personal outcomes-negative	3.200	0.827	3.231	0.838	3.053	0.859	3.325	0.694	1.712	0.182
	Supervisor sanctions	2.233	0.870	2.113	0.824	2.187	0.725	2.856	1.051	13.090	***0.000***
Transfer Design Variables	Content validity	4.029	0.567	4.078	0.577	4.056	0.520	3.760	0.540	5.412	0.005
	Transfer design	4.172	0.489	4.238	0.462	4.088	0.519	4.025	0.509	4.583	0.011
Ability Variables	Personal capacity for Transfer	4.048	0.521	4.082	0.510	4.061	0.517	3.867	0.554	2.849	0.060
	Opportunity to use	3.444	0.734	3.476	0.666	3.419	0.769	3.344	0.948	0.587	0.557
TPB Variables	Sharing behaviour	3.944	0.583	3.979	0.564	3.863	0.677	3.931	0.470	1.030	0.358
	Intention to share	4.165	0.459	4.183	0.469	4.187	0.437	4.044	0.442	1.625	0.199
	Attitude toward knowledge sharing	4.365	0.498	4.374	0.491	4.401	0.510	4.263	0.510	1.063	0.347
	Subjective norms toward knowledge sharing	3.979	0.599	4.051	0.588	3.859	0.672	3.869	0.459	3.469	0.032
	Perceived behavioural control toward knowledge sharing	4.095	0.547	4.119	0.500	4.099	0.672	3.983	0.500	1.001	0.369

Note: The variables that differed significantly ($p < 0.002$) are in ***bold italics***.

APPENDIX L2:
Multivariate Analysis of Variance (MANOVA) Across Gender

Category Of Variables	Variables Name	Gender						F	P
		Total		Male		Female			
		Mean	SD	Mean	SD	Mean	SD		
Dependent Variable	Motivation to transfer	4.334	0.486	4.252	0.483	4.425	0.476	9.438	0.002
Secondary Influence Variables	Learner readiness	4.422	0.528	4.351	0.529	4.499	0.517	5.804	0.017
	Performance-self efficacy	4.168	0.479	4.128	0.458	4.210	0.499	2.144	0.144
Expected Utility Variables	Transfer effort-performance expectations	4.054	0.540	3.992	0.588	4.122	0.475	4.289	0.039
	Performance-outcomes expectations	3.385	0.659	3.428	0.703	3.338	0.606	1.343	0.248
Transfer Climate Variables	Feedback	3.808	0.603	3.821	0.564	3.793	0.645	0.151	0.698
	Peer support	3.589	0.638	3.605	0.660	3.572	0.616	0.197	0.657
	Supervisor support	3.791	0.637	3.748	0.662	3.838	0.607	1.445	0.230
	Openness to change	2.745	0.867	2.783	0.929	2.703	0.794	0.613	0.434
	Personal outcomes-positive	4.013	0.528	3.993	0.518	4.034	0.541	0.431	0.512
	Personal outcomes-negative	3.200	0.827	3.317	0.790	3.072	0.851	6.517	0.011
	Supervisor sanctions	2.233	0.870	2.367	0.947	2.086	0.755	7.713	0.006
Transfer Design Variables	Content validity	4.029	0.567	3.938	0.540	4.128	0.580	8.354	0.004
	Transfer design	4.172	0.489	4.125	0.504	4.223	0.468	2.939	0.088
Ability Variables	Personal capacity for Transfer	4.048	0.521	4.046	0.523	4.048	0.521	0.001	0.975
	Opportunity to use	3.444	0.734	3.434	0.778	3.455	0.686	0.058	0.810
TPB Variables	Sharing behaviour	3.944	0.583	3.906	0.595	3.986	0.568	1.349	0.246
	Intention to share	4.165	0.459	4.104	0.467	4.232	0.422	5.776	0.017
	Attitude toward knowledge sharing	4.365	0.498	4.299	0.508	4.437	0.479	5.633	0.018
	Subjective norms toward knowledge sharing	3.979	0.599	3.864	0.608	4.106	0.565	12.371	***0.001***
	Perceived behavioural control toward knowledge sharing	4.095	0.547	4.026	0.590	4.170	0.487	5.097	0.025

Note: The variable that differed significantly ($p < 0.002$) is in ***bold italics***.

APPENDIX L3:
Multivariate Analysis of Variance (MANOVA) Across Age

Category Of Variables	Variables Name	Age								F	P
		Total		30 years and below		Between 31 to 40 years		41 and above			
		Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Dependent Variable	Motivation to transfer	4.334	0.486	4.370	0.502	4.244	0.455	4.384	0.483	2.222	0.110
Secondary Influence Variables	Learner readiness	4.422	0.528	4.419	0.519	4.290	0.575	4.631	0.398	7.681	***0.001***
	Performance-self efficacy	4.168	0.479	4.184	0.514	4.135	0.438	4.177	0.454	0.302	0.740
Expected Utility Variables	Transfer effort-performance expectations	4.054	0.540	4.063	0.606	3.989	0.465	4.134	0.466	1.300	0.274
	Performance-Outcomes Expectations	3.385	0.659	3.361	0.625	3.435	0.688	3.366	0.700	0.377	0.686
Transfer Climate Variables	Feedback	3.808	0.603	3.846	0.612	3.826	0.528	3.685	0.678	1.522	0.220
	Peer support	3.589	0.638	3.630	0.671	3.567	0.568	3.522	0.661	0.673	0.511
	Supervisor support	3.791	0.637	3.799	0.680	3.753	0.492	3.832	0.725	0.288	0.750
	Openness to change	2.745	0.867	2.724	0.916	2.773	0.823	2.754	0.816	0.090	0.914
	Personal outcomes-positive	4.013	0.528	4.049	0.502	3.949	0.496	4.022	0.632	0.978	0.377
	Personal outcomes-negative	3.200	0.827	3.281	0.820	3.216	0.834	2.974	0.808	2.912	0.056
	Supervisor sanctions	2.233	0.870	2.118	0.889	2.376	0.926	2.297	0.692	2.653	0.072
Transfer Design Variables	Content validity	4.029	0.567	4.029	0.658	3.982	0.467	4.100	0.453	0.759	0.469
	Transfer design	4.172	0.489	4.208	0.477	4.143	0.501	4.125	0.501	0.819	0.442
Ability Variables	Personal capacity for Transfer	4.048	0.521	4.028	0.519	4.023	0.512	4.132	0.541	0.971	0.380
	Opportunity to use	3.444	0.734	3.422	0.742	3.419	0.724	3.539	0.737	0.600	0.549
TPB Variables	Sharing behaviour	3.944	0.583	3.965	0.608	3.924	0.491	3.922	0.653	0.186	0.830
	Intention to share	4.165	0.459	4.186	0.474	4.129	0.452	4.168	0.435	0.418	0.659
	Attitude toward knowledge sharing	4.365	0.498	4.354	0.505	4.317	0.510	4.466	0.458	1.627	0.198
	Subjective norms toward knowledge sharing	3.979	0.599	4.002	0.651	3.975	0.513	3.931	0.596	0.290	0.748
	Perceived behavioural control toward knowledge sharing	4.095	0.547	4.090	0.547	4.045	0.544	4.184	0.522	1.145	0.320

Note: The variable that differed significantly ($p < 0.002$) is in ***bold italic.***

APPENDIX L4:
Multivariate Analysis of Variance (MANOVA) Across Level of Education

Category Of Variables	Variables Name	Education Level						F	P
		Total		Below than bachelor degree		Bachelor degree and above			
		Mean	SD	Mean	SD	Mean	SD		
Dependent Variable	Motivation to transfer	4.334	0.486	4.385	0.486	4.289	0.483	2.849	0.093
Secondary Influence Variables	Learner readiness	4.422	0.528	4.518	0.446	4.336	0.579	8.848	0.003
	Performance-self efficacy	4.168	0.479	4.148	0.501	4.185	0.459	0.438	0.509
Expected Utility Variables	Transfer effort-performance expectations	4.054	0.540	4.084	0.571	4.028	0.511	0.789	0.375
	Performance-outcomes expectations	3.385	0.659	3.403	0.619	3.369	0.694	0.202	0.654
Transfer Climate Variables	Feedback	3.808	0.603	3.920	0.523	3.708	0.652	9.206	0.003
	Peer support	3.589	0.638	3.655	0.610	3.531	0.659	2.764	0.097
	Supervisor support	3.791	0.637	3.923	0.586	3.674	0.659	11.546	***0.001***
	Openness to change	2.745	0.867	2.666	0.789	2.815	0.927	2.149	0.144
	Personal outcomes-positive	4.013	0.528	4.108	0.496	3.929	0.544	8.541	0.004
	Personal outcomes-negative	3.200	0.827	3.339	0.778	3.076	0.852	7.501	0.007
	Supervisor sanctions	2.233	0.870	2.243	0.866	2.224	0.877	0.033	0.855
Transfer Design Variables	Content validity	4.029	0.567	3.985	0.575	4.068	0.558	1.525	0.218
	Transfer design	4.172	0.489	4.181	0.496	4.164	0.484	0.084	0.772
Ability Variables	Personal capacity for Transfer	4.048	0.521	4.017	0.533	4.074	0.510	0.853	0.356
	Opportunity to use	3.444	0.734	3.524	0.743	3.373	0.722	3.060	0.081
TPB Variables	Sharing behaviour	3.944	0.583	3.969	0.508	3.922	0.643	0.469	0.494
	Intention to share	4.165	0.459	4.170	0.442	4.161	0.475	0.028	0.868
	Attitude toward knowledge sharing	4.365	0.498	4.363	0.505	4.367	0.494	0.004	0.949
	Subjective norms toward knowledge sharing	3.979	0.599	4.029	0.534	3.935	0.650	1.794	0.181
	Perceived behavioural control toward knowledge sharing	4.095	0.547	4.117	0.517	4.076	0.574	0.407	0.524

Note: The variable that differed significantly ($p < 0.002$) is in ***bold italic.***

APPENDIX L5:
Multivariate Analysis of Variance (MANOVA) Across Work Experience

Category Of Variables	Variables Name	Work Experience								F	P
		Total		Less than 5 years		Between 5 to 10 years		Above 10 years			
		Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Dependent Variable	Motivation to transfer	4.334	0.486	4.350	0.518	4.302	0.443	4.335	0.476	0.214	0.807
Secondary Influence Variables	Learner readiness	4.422	0.528	4.397	0.546	4.293	0.571	4.544	0.444	4.896	0.008
	Performance-self efficacy	4.168	0.479	4.169	0.516	4.164	0.441	4.168	0.457	0.002	0.998
Expected Utility Variables	Transfer effort-performance expectations	4.054	0.540	4.020	0.601	4.022	0.486	4.121	0.487	1.121	0.327
	Performance-Outcomes Expectations	3.385	0.659	3.366	0.601	3.392	0.743	3.405	0.676	0.098	0.907
Transfer Climate Variables	Feedback	3.808	0.603	3.837	0.599	3.772	0.541	3.793	0.652	0.285	0.752
	Peer support	3.589	0.638	3.581	0.624	3.642	0.656	3.564	0.649	0.310	0.734
	Supervisor support	3.791	0.637	3.770	0.674	3.802	0.493	3.812	0.679	0.133	0.876
	Openness to change	2.745	0.867	2.728	0.864	2.825	0.917	2.711	0.839	0.378	0.686
	Personal outcomes-positive	4.013	0.528	4.047	0.538	3.948	0.441	4.013	0.571	0.776	0.461
	Personal outcomes-negative	3.200	0.827	3.246	0.826	3.179	0.847	3.155	0.821	0.363	0.696
	Supervisor sanctions	2.233	0.870	2.049	0.835	2.410	0.952	2.351	0.819	5.259	***0.006***
Transfer Design Variables	Content validity	4.029	0.567	3.991	0.658	4.024	0.478	4.083	0.490	0.725	0.485
	Transfer design	4.172	0.489	4.199	0.503	4.202	0.413	4.116	0.517	0.950	0.388
Ability Variables	Personal capacity for Transfer	4.048	0.521	4.045	0.510	4.010	0.475	4.076	0.568	0.315	0.730
	Opportunity to use	3.444	0.734	3.372	0.680	3.530	0.726	3.479	0.803	1.181	0.308
TPB Variables	Sharing behaviour	3.944	0.583	3.963	0.553	3.963	0.489	3.907	0.676	0.291	0.748
	Intention to share	4.165	0.459	4.205	0.448	4.105	0.426	4.155	0.493	1.084	0.340
	Attitude toward knowledge sharing	4.365	0.498	4.341	0.506	4.291	0.527	4.449	0.461	2.270	0.105
	Subjective norms toward knowledge sharing	3.979	0.599	4.030	0.623	3.955	0.531	3.930	0.613	0.822	0.441
	Perceived behavioural control toward knowledge sharing	4.095	0.547	4.074	0.546	4.065	0.503	4.144	0.579	0.594	0.553

Note: *Supervisor sanctions* is slightly above the 0.002 significance level (p = 0.006).

APPENDIX L6:
Multivariate Analysis of Variance (MANOVA) Across Position of Employment

Category Of Variables	Variables Name	Education Level						F	P
		Total		Below than bachelor degree		Bachelor degree and above			
		Mean	SD	Mean	SD	Mean	SD		
Dependent Variable	Motivation to transfer	4.334	0.486	4.279	0.487	4.391	0.480	3.878	0.050
Secondary Influence Variables	Learner readiness	4.422	0.528	4.317	0.580	4.529	0.445	12.215	***0.001***
	Performance-self efficacy	4.168	0.479	4.172	0.453	4.163	0.505	0.023	0.879
Expected Utility Variables	Transfer effort-performance expectations	4.054	0.540	4.014	0.518	4.096	0.560	1.676	0.196
	Performance-outcomes expectations	3.385	0.659	3.362	0.693	3.408	0.624	0.350	0.554
Transfer Climate Variables	Feedback	3.808	0.603	3.697	0.649	3.920	0.531	10.250	0.002
	Peer support	3.589	0.638	3.554	0.671	3.625	0.603	0.889	0.347
	Supervisor support	3.791	0.637	3.687	0.675	3.898	0.579	8.142	0.005
	Openness to change	2.745	0.867	2.838	0.914	2.649	0.808	3.495	0.063
	Personal outcomes-positive	4.013	0.528	3.915	0.537	4.113	0.502	10.531	***0.001***
	Personal outcomes-negative	3.200	0.827	3.092	0.864	3.311	0.776	5.169	0.024
	Supervisor sanctions	2.233	0.870	2.219	0.871	2.247	0.872	0.071	0.791
Transfer Design Variables	Content validity	4.029	0.567	4.068	0.572	3.989	0.561	1.420	0.234
	Transfer design	4.172	0.489	4.163	0.487	4.181	0.492	0.091	0.763
Ability Variables	Personal capacity for Transfer	4.048	0.521	4.079	0.516	4.014	0.526	1.148	0.285
	Opportunity to use	3.444	0.734	3.384	0.717	3.505	0.749	1.977	0.161
TPB Variables	Sharing behaviour	3.944	0.583	3.924	0.638	3.965	0.521	0.374	0.541
	Intention to share	4.165	0.459	4.153	0.476	4.177	0.442	0.199	0.656
	Attitude toward knowledge sharing	4.365	0.498	4.354	0.496	4.377	0.502	0.154	0.695
	Subjective norms toward knowledge sharing	3.979	0.599	3.927	0.662	4.033	0.524	2.291	0.131
	Perceived behavioural control toward knowledge sharing	4.095	0.547	4.057	0.575	4.134	0.516	1.464	0.227

Note: The variables that differed significantly ($p < 0.002$) are in ***bold italics.***

APPENDIX N

REGRESSION COEFFICIENT AND MEASUREMENT ERROR VARIANCE WORKINGS

Regression Coefficient and Measurement Error Variance

Construct	Standard Deviation (σ)	Reliability Coefficient (α)	Regression Coefficient $\lambda = \sigma \sqrt{\alpha}$	Measurement Error Variances $\theta = \sigma^2 (1- \alpha)$
Motivation to transfer	0.486	0.806	$0.486 \sqrt{0.806}$ = 0.436	$0.486^2 (1- 0.806)$ = 0.046
Learner Readiness	0.528	0.731	$0.528 \sqrt{0.731}$ = 0.451	$0.528^2 (1- 0.731)$ = 0.075
Feedback	0.603	0.809	$0.603 \sqrt{0.809}$ = 0.542	$0.603^2 (1- 0.809)$ = 0.069
Personal Outcomes-Positive	0.529	0.720	$0.529 \sqrt{0.720}$ = 0.449	$0.529^2 (1- 0.720)$ = 0.078
Personal Capacity for Transfer	0.521	0.803	$0.521 \sqrt{0.803}$ = 0.467	$0.521^2 (1- 0.803)$ = 0.053
Content Validity	0.567	0.783	$0.567 \sqrt{0.783}$ = 0.502	$0.567^2 (1- 0.783)$ = 0.070
Sharing Behaviour	0.583	0.826	$0.583 \sqrt{0.826}$ = 0.530	$0.583^2 (1- 0.826)$ = 0.059